

addVANTAGE Pro 6.4

Administrator Guide



SMART WIRELESS SOLUTIONS

Proprietary Notice

The Adcon logo, Adcon Telemetry, Smart Wireless Solutions, the A720, A723 and A730 series, addIT, addWAVE, the A840 and A850 series and Telemetry Gateway, AgroExpert, addVANTAGE®, addVANTAGE Lite and addVANTAGE Pro are trademarks or registered trademarks of Adcon Telemetry GmbH. Excel® is a registered trademark of the Microsoft Corporation. Acrobat Reader® is a registered trademark of the Adobe Corporation. OOo.calc is part of the OpenOffice.org application suite, which is a trademark of Sun Microsystems, Inc.

Neither the whole nor any part of the information contained in this publication may be reproduced in any material form except with the prior written permission of Adcon Telemetry GmbH.

This publication is intended only to assist the reader in the use of the product. Adcon Telemetry GmbH shall not be liable for any loss or damage arising from the use of any information in this publication, or any error or omission in such information, or any incorrect use of the product.

Document Release 6.4, December 2013
Copyright ©2001-2013 by Adcon Telemetry GmbH.
All rights reserved.

Contents

Chapter 1. Introduction	7
What's New in addVANTAGE Pro 6.4	7
What is the Adcon System?	7
System Components	8
A Modular Approach	8
System Requirements	9
Platforms	9
Minimum Requirements	9
Telemetry Gateway Configuration	9
addVANTAGE Pro Services over the Internet	10
How it Works	10
WAP Access	10
Disabling Password Protection for WAP Access	11
Using addVANTAGE Pro Data in Other Programs	11
Conventions and Terminology	11
Windows and Captions	11
Documentation	12
Tags	13
Summary	13
 Chapter 2. Getting Started	 14
Overview	14
The Short Path from RTUs to addVANTAGE Pro	14
Server Installation	15
Installing the Software	15
After the Installation	16
First Steps	17
The addMIN Utility	17
Entering the Licensing Information	17
Installing Free Extensions	17
Starting the Server	19
Installing the Server As a Service	20
Not Using the Server As a Service	20
Uninstalling the Server As a Service	20
Connecting to addVANTAGE Pro	20
Stopping the addVANTAGE Pro Server	21
Navigating the Data	21
Logging in to the Server	21
The Explorer	21
Objects in the Explorer	21
Functions in Explorer	22
Menubar and Toolbar	26

Chapter 3. Security Features _____ 27

Administering Users, Groups, and Roles _____	27
Working with Users _____	27
Adding, Editing, Copying, and Removing Users _____	28
Working with Groups _____	31
Working with Roles _____	31
Defined Roles _____	32

Chapter 4. Node Properties and Tools _____ 33

Node Properties _____	33
Node Action Properties _____	34
Node Security Properties _____	35
RTU/Tag _____	36
Tag General Properties _____	37
Tag DACQ Properties _____	37
Tag Threshold Properties _____	38
Panels _____	39
Extensions and Crops _____	39
The Tools Menu _____	39
Selecting User Options _____	40
My Settings Tab _____	40
Panels Tab _____	40
Explorer Tab _____	41
Crops Tab _____	41
Extensions Tab _____	42
Engineering Units Tab _____	43
Security Tab _____	43
Using Server Settings _____	44
Log Monitor _____	44
Server Diagnostics _____	44
Extensions Info _____	46
E-mail Settings _____	46
SIP/VoIP Settings _____	47
Administering Your Database _____	48
Changing Backup Settings _____	48
Backing Up Immediately _____	48
Importing a Backed Up Database _____	49
User Management _____	49
Sending Messages to Users _____	49
The Data Acquisition Service _____	50
Configuring the Data Acquisition Service _____	50
Retrieving Data from a Server _____	53
Disabling the Data Transfer from a Server _____	54
Reconnecting Tags _____	54
Using the RTU Creation Wizard _____	54
Getting Data from the Server _____	56
Using the Chemicals Service _____	56
Using the Node Template Library _____	56
Using the Climate Manager _____	58

Chapter 5. Creating Panels _____ 60

The List _____	60
Search _____	61
Quick Search _____	61
Search from Here _____	61
Properties _____	62
The Trend Viewer _____	62
Viewing Trends with Drag-and-Drop _____	63
Viewing Trends from Explorer _____	64
Using Properties to Add Tags to Trends _____	65
Y-axis Tab _____	66
Plots Tab _____	67
Thresholds Tab _____	67
Display Tab _____	69
A Trend Example _____	69
Saving Trends _____	70
Create a Trend from a Template _____	71
From Trends to Tables _____	71
Export data on the fly _____	72
Method 1: Exporting all the data _____	72
Method 2: Export selected data sets only (copy to clipboard) _____	73
Instrument View _____	73
The Events Viewer _____	73
Properties _____	73
Selecting Nodes _____	74
Displaying Event Types _____	74
Selecting Event Options _____	76
Event Alarms _____	76
Locating the Source of an Alarm _____	77
Using the Events Viewer _____	77
Saving the Events Viewer _____	77
Create an Events Viewer from a Template _____	78
Linked Panels _____	78

Chapter 6. Working with Extensions and Crops _____ 80

About addVANTAGE Pro Extensions _____	80
The Info Button _____	80
Recalculating Extensions and Crops _____	80
Adding Extensions and Crops to an Area _____	81
Adding Multiple Extensions and Crops _____	81
Using Templates to Add Extensions or Crops _____	81
Adding a New Season to a Crop _____	81
Adding RTU Diagnostics to a Tag _____	81

Properties for Extensions and Crops _____	82
Common Properties _____	82
Properties for Crops _____	82
The Crop Tab _____	83
The Treatments Tab _____	83
The Irrigation Tab _____	85
Properties for Calculation Extensions and Disease Models _____	85
The Extension Tab _____	86
The Advanced Settings Tab _____	86
The Inputs Tab _____	87
Extension Properties for Diagnostic Extensions _____	87
Appendix _____	89
Upgrading From Previous addVANTAGE Releases _____	89
addVANTAGE Pro Versions 5.1 through 6.1 _____	89
addVANTAGE Pro Versions Prior to 5.1 _____	91
Fine Tuning your addVANTAGE Pro Server _____	91
Editing Memory Settings _____	91
Creating a Dial-up Connection to the Data Source _____	91
Public Trends _____	92
What User Settings Are Used _____	93
Setting up a Public Trend _____	93
Third-Party Tools _____	93
Index _____	100

Chapter 1. Introduction

This manual details the installation and use of the addVANTAGE Pro software product, which is used in conjunction with most of Adcon's telemetry devices. For information about the installation and use of the telemetry devices, refer to the respective device's manual.

If you are familiar with using addVANTAGE Pro in conjunction with the telemetry devices provided by Adcon, you might want to skip ahead to ["The Short Path from RTUs to addVANTAGE Pro" on page 14](#).

What's New in addVANTAGE Pro 6.4

Following are some of the features in this version:

- Updated the data acquisition feature
- Added settings to show the server status
- Added backup verification after backup is complete
- Added server diagnostics, the node template manager, and the RTU creation wizard
- Added copy/cut/paste of nodes (similar to "create by template")
- Added the ability to send messages to groups of users
- Updated several features for trends
- Updated the user interface with new search features, buttons, and icons

What is the Adcon System?

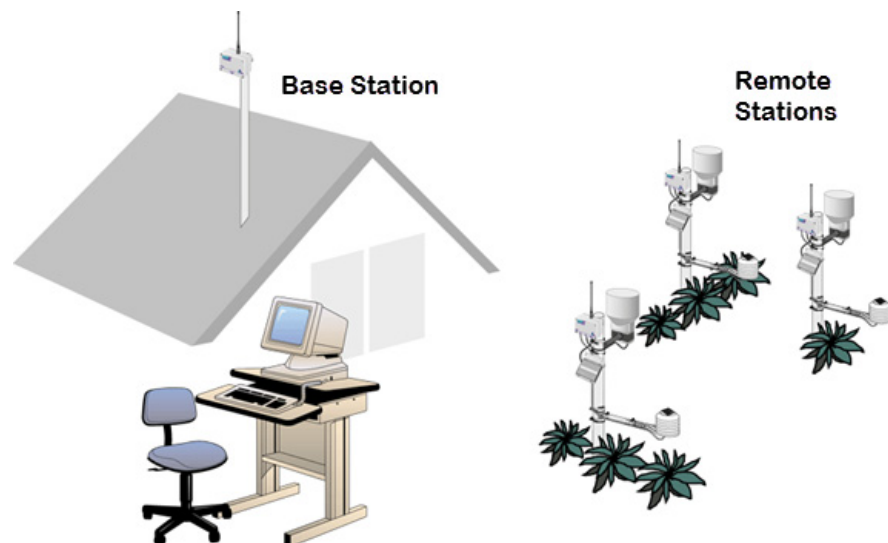
The addVANTAGE Pro software and telemetry devices work together to form the Adcon system, which can be defined as a system that allows you to:

1. Measure certain parameters over a predefined area
2. Send those parameters over relatively large distances to a central point
3. Process the parameters as needed for various applications such as agriculture, meteorology, irrigation control, water management, and environmental analysis

By *parameters* we mean a physical value that can be converted to an electrical counterpart. For example, air temperature, relative humidity, and leaf wetness have values that can be converted to an electrical form by means of *sensors*. If a sensor exists for a certain physical parameter, it is very likely that it can be

adapted to Adcon's system. [Figure 1](#) illustrates the components of the Adcon system.

Figure 1. The Adcon Telemetry System



System Components

The electrically converted parameters are first stored in the memory of a *remote telemetry unit*, or RTU. Adcon currently provides a large array of RTUs employing different wireless technologies, from private radio to GSM/GPRS based devices.

An RTU has its own intelligence in the form of a built-in microcontroller, which periodically performs several tasks, for example, interrogate the sensors, store the measured data, check the radio channel, check the local battery status, and so forth. It is part of a *remote station*, which consists of the RTU, its assembly parts, and its sensors. The RTU is equipped with a radio module or a GSM modem, which allows for real-time wireless communication with a base station.

Reverse communication is also possible with the Adcon system. The addVANTAGE Pro software can issue a command that will be sent via the wireless network to the RTUs to control devices such as switches, pumps, motors, and relays.

The *base station* consists of a Telemetry Gateway (or receiver) and your personal computer. The Gateway acts as a network controller—at regular intervals (typically 15 minutes, but this can be changed) it requests data via radio or modem from the RTUs in the network. The receiver stores the incoming data in its memory, thus allowing the receiver to supervise a large number of RTUs and keep their data for a period of time without the need to download the data to the PC. The number of controlled RTUs depends on the receiver type, and some receiver models can handle over 1000 units.

Note: *The period of time a receiver can store data is dependent on the number of RTUs in the network and the type of receiver. The oldest data is overwritten.*

The addVANTAGE Pro software regularly downloads the data from the receiver's memory to the PC. The receiver's internal battery allows it to operate for 12 to 24 hours (depending on the number of RTUs to be requested and the respective polling interval) in the event of a power outage. After that, the receiver stops accumulating data, but it keeps the data already retained—even without power—until you are able to provide power to it.

A Modular Approach

The addVANTAGE Pro software, which is based on a client/server architecture, collects data from one or several Adcon Telemetry Gateways (receivers) and makes it available for viewing or for specialized analysis.

The *server* is that part of the software where all the actual processing takes place. It usually starts automatically when the computer is started and runs in the background. The server is responsible for downloading data from the Telemetry Gateway, storing data into the database, starting and stopping extensions, and servicing clients as they connect.

The addVANTAGE Pro server is based on a modular concept, meaning its parts contribute to the whole but are also independent of it. The server has a framework that runs various *services* and each service is responsible for a function. For example:

- The *Security service* authenticates the users and checks their privileges.
- The *Directory service* deals with all objects existing on the system.
- The *Data Acquisition service* retrieves the remote data.
- The *Extension service* creates the proper environment for the extensions to run.
- The *Database service* assures the connection to the database for all other services.

Extensions are a very important concept of addVANTAGE Pro. They are standalone modules dealing with raw data and processing it according to certain rules. Extensions provide events and alarms; in some cases, extensions may provide output tags (which are also called *virtual sensors*, but more on this later).

This modular approach provides a great degree of flexibility both to users and programmers because it offers, among other things, an open interface for third parties that want to program new extensions.

Starting with addVANTAGE Pro 5.0, the client software is based on a standard web browser. Internet Explorer 10.0 and all versions of Mozilla Firefox have been certified to be fully compatible with addVANTAGE Pro 6.x. Additional browsers could be supported in future releases. If you use Internet Explorer (IE) 10, Adcon recommends that you run IE in Compatibility Mode.

System Requirements

This section describes the available platforms for the software and what your system needs to run the software.

CAUTION

It is mandatory that any addVANTAGE Pro 5.1 or later software (other than the single-user version for one seat and five RTUs) be installed on a dedicated machine.

Platforms

The addVANTAGE Pro 6.4 server runs on a Java 2 (JVM 1.6 or higher) platform. It was tested on Microsoft Windows 7.

The client runs in a web browser. Only Microsoft IE 10 and Mozilla Firefox (any version) are officially supported.

Minimum Requirements

We recommend using at least a dual-core processor with 2.0GHz and 1.5GB of RAM, with sufficient hard disk space to allow for larger databases. In order to run addVANTAGE Pro 6.4 with adequate speed, you should provide your system with 1MB of RAM for each RTU. Starting with 1.5GB of free RAM will give you sufficient resources for adding RTUs and running larger databases.

Note: *This hardware configuration will be a good start for small to medium operations. The more clients you add, the more RTUs you add, the more years of data you accumulate in your database, the more memory and processing power you might have to add.*

Telemetry Gateway Configuration

You can download data either from another addVANTAGE Pro 6.4 server or from an Adcon Telemetry Gateway. If you have a Telemetry Gateway, you also need Sun Microsystems' Java Virtual Machine, as indicated for the addVANTAGE Pro server.

Finally, you need to verify that you have the latest firmware for the Telemetry Gateway. For your convenience, we have included a version of this firmware on the distribution CD. For updates please contact your Adcon Telemetry Distributor. Information about the latest releases and new features you can find on our web site. (<http://www.adcon.at>). For more details about the Gateway's configuration, refer to the *Base Station—Telemetry Gateway A840 and Wireless Modem A440 User Guide*.

Note: *addVANTAGE Pro is compatible only with the A840 Telemetry Gateway running the firmware release 3.8.0 or higher and the A850 Telemetry Gateway. You cannot use an A730SD receiver to retrieve data into addVANTAGE Pro 6.4.*

addVANTAGE Pro Services over the Internet

addVANTAGE Pro is built from the ground up to support the Internet. Apart from the fact that all the data transfer protocols used by addVANTAGE Pro are Internet-compatible, you can provide all of the data addVANTAGE Pro holds over the Internet via the built-in web server. In addition, a limited amount of data (last recorded tag values) can be provided to mobile phones via WAP (Wireless Access Protocol).

Be aware that several conditions must be met before you can offer web services over the Internet:

- You need a fixed IP address and a valid Internet hostname in a domain registered with an Internet registrar.
- You need a computer able to support the additional load, depending on the number of concurrent users your server will have to support.
- You need an *always-on* Internet connection offering sufficient throughput, otherwise your customers will be frustrated with the long download times. Depending on the number of customers and RTUs in your system Adcon recommends following connection types (DSL, XDSL, cable, leased lines):
 - at least 128 Kbps for a small server with few users (up to 5)
 - at least 512 Kbps for a medium server with up to 50 users
 - at least a T1 line for a large server with more than 50 users

Note: *Beware of asymmetric lines—the numbers given above refer to the throughput for the upload channel.*

- You need a suitable license to support the number of concurrent users you plan to allow.

How it Works

Keep in mind these issues when planning to offer data from addVANTAGE Pro over the Internet:

- Every user who accesses addVANTAGE Pro services over the Internet must have an account already established.
- Depending on the privileges you give to each user, you might need to create the appropriate panels for them (Trend and Events viewers). You might also need to add RTUs, tags, and extensions.
- The users must have read access to the panels you want them to see.

For additional details about creating and administering accounts, see ["Administering Users, Groups, and Roles" on page 27](#). For creating panels, see ["The Trend Viewer" on page 62](#) and ["The Events Viewer" on page 73](#). For adding RTUs and tags see ["Configuring the Data Acquisition Service" on page 50](#), while for details about adding extensions see ["Adding Extensions and Crops to an Area" on page 81](#).

WAP Access

WAP access is automatically enabled in addVANTAGE Pro 6.4 and it is password protected. The information accessible via WAP is limited and the users can access only the last value recorded for each tag. However, you can disable password protection for WAP access on your server.

To access the addVANTAGE Pro server via WAP, your users need to enter (and store) a link similar to:

`http://yourserver.domain.com:8080/wap?u=username&p=passwd`

If the password protection feature is disabled, the link becomes simply:

`http://yourserver.domain.com:8080/wap`

After the link is entered in the cell phone, the user simply accesses it as a normal WAP link. The navigation is limited to the areas, RTUs, and tags where the user has access rights (if password protection is enabled).

Disabling Password Protection for WAP Access

The access over WAP is by default set to require a password (it is the standard user name and password of the respective user). Due to the fact that it might be difficult to enter user names and passwords on a cell phone keyboard you may want to disable it. This can be done by editing the file `webapps\ROOT\WEB-INF\config\addServer.properties`. Look for the entry `mobileservice.authrequired`, which by default is set to `true` and change it to `false` (be sure to remove the # hash signs, if any, at the beginning of the line). Then save the file and restart the server. Now to access your server via WAP, your users must use a link of this form:

`http://yourserver.domain.com:8080/wap`

without the need for a *username* and a *password*.

Note: *Disabling password protection for WAP access makes the data on your server available to anyone in the world with a cell phone.*

Using addVANTAGE Pro Data in Other Programs

The addVANTAGE Pro software has the ability to offer the sensor's raw data to other applications via an open protocol called addUPI. In fact, addVANTAGE Pro itself uses this protocol for retrieving data from either other servers or the Telemetry Gateway (see "[The Data Acquisition Service](#)" on page 50).

Through the addUPI protocol, you can retrieve information about the node structure of a server, set/get the node's attributes, invoke functions on the server (for example, switch on and off outputs on the RTUs), and of course, retrieve the sensor data. For a complete protocol specification, please contact Adcon Telemetry.

Another way of importing data from addVANTAGE to other programs is the A2A utility (addUPI to ASCII). As its name implies, this is a program that retrieves data from an addUPI server (it can be either an addVANTAGE Server or a Telemetry Gateway) and stores it in files on the local computer. The file format can be configured by the user through the numerous options available, thus making it usable with many programs that use ASCII files for data interchange.

Which solution is better for you? That depends on the importing application. Generally, if you have control over the software or its publisher, Adcon recommends using addUPI. Doing so, however, means you will need to implement or ask the publisher to implement an addUPI client in the respective program. If you do not have control over the program, A2A is the sole solution because you only need to configure a proper export format from A2A and feed the resulting files to the program.

Conventions and Terminology

This section explains standard terminology and usage for Adcon software and manuals.

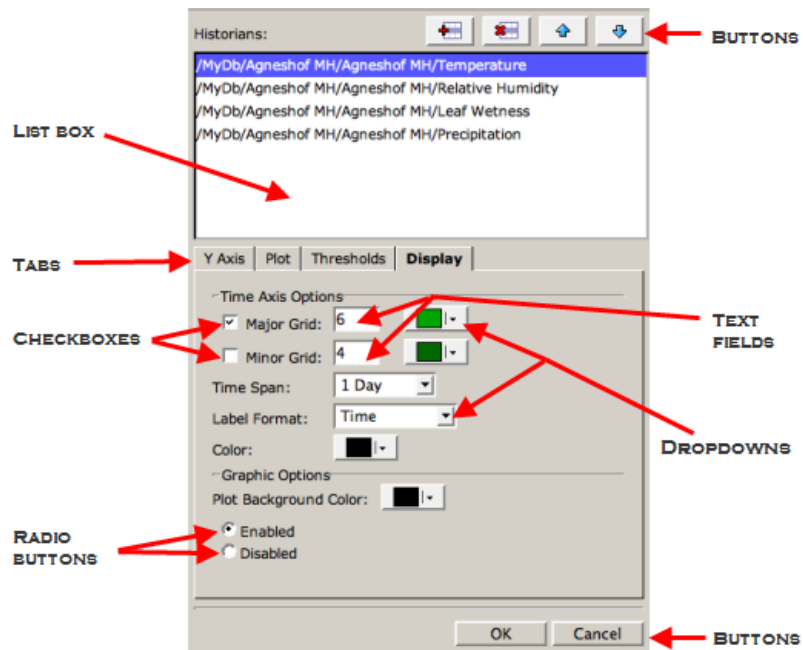
Windows and Captions

Although you will not see a software window that looks exactly like the one shown in [Figure 2](#), we have included it to illustrate the various items on a software window.

Most operations in addVANTAGE can be performed on a context basis. That is, right-clicking an object displays a context menu from which you select the desired operation. You can see an example of a context menu in [Figure 13](#) in Chapter 2.

This manual does not attempt to explain basic computer use. Therefore, you should be familiar with basic computer terminology and the use of typical computer interfaces like the mouse and keyboard.

Figure 2. A Sample Software Window



Text Field	Type information here.
Checkbox	Select or unselect by clicking the box. A selected box has an X or a check mark in it, while an unselected box is empty.
Radio button	These round buttons come in multiples. You can select only one.
Listbox	This area shows a list of choices you can select by clicking.
Dropdown	A box with a small down arrow (▾) you must click before you can see the list of choices to select from.
Button	These are rectangular shapes with a name. Select a button by clicking it.
Tab	Click to see another view of the dialog.

Documentation

Certain conventions apply in this documentation.

<i>Italics</i>	Indicate the text is variable and must be substituted for something specific, as indicated in the explanation. Italics can also be used to emphasize words as words or letters as letters, and for cross references to other books.
Bold	Indicates special emphasis of the text.
<code>fixed font</code>	Indicates characters you must type or system messages, as well as default values and file names.
Help ► About	Indicates menu selection. For example, select the Help menu, then the About option. Also indicates items on the graphical user interface.
Note	Indicates information of interest. Notes appear after the information they apply to.

CAUTION

Indicates that you might get unexpected results if you don't follow the instructions. Cautions appear **before** the information they apply to.

WARNING

Indicates danger to yourself or damage to the device if you don't follow the instructions. Warnings appear **before** the information they apply to.

Tags

You'll see the terms *tag* and *sensor* used throughout this manual. Tag is a generic term for something that pertains to data, regardless of whether it collects or controls that data. Tags can represent any of the following:

- Physical sensors, such as those for temperature, leaf wetness, or humidity.
- Actuators, such as switches, relays, or valves.
- Virtual sensors, which are the result of a computation, such as an average, a sum, or an ET_0 (evapo-transpiration reading). Virtual sensors are created with extensions. With some extensions, you can use a virtual sensor in combination with other sensors to create a new virtual sensor, which in itself is another tag.

Summary

Adcon's Data Acquisition system contains hardware and software parts. The hardware components are:

- A personal computer and/or a server machine
- The receiver or Telemetry Gateway (A840, A850, A440 modem)
- The RTUs (also referred to as devices), for example addWAVE A733, addWAVE A733GSM, addIT A723, and addNODE A740.
- Sensors and actuators
- Various supplementary parts (accessories such as antennas, cables, and masts)

The software consists of:

- The addVANTAGE Pro 6.4 server
- Application-specific server extensions
- Utilities for configuration and maintenance
- A web browser

Chapter 2. Getting Started

Since the initial introduction of addVANTAGE Pro 5 in 2006, you have been able to access the client software through a standard Internet browser such as Microsoft Internet Explorer or Mozilla Firefox. While you still have the option to install addVANTAGE Pro on your own machine, you can also work through an internet connection linking up to your data provider's addVANTAGE Pro 6.4 server, accessing all the features through your web browser on *that* machine. All you will need is a reasonably fast internet connection and a user name and password to access your data.

Overview

For large installations, Adcon recommends that you install the server on a separate computer. The server must have enough power and memory to sustain the expected number of clients and RTUs, as well as the number of extensions that will process the data. For more information on the server requirements, see ["Minimum Requirements" on page 9](#).

You can consider several types of systems depending on your application and the corresponding license type you acquired. For example, if you have an application where you manage only one or two remote stations (RTUs), you could install the server on the same machine you are using for your day-to-day use. After installing addVANTAGE Pro you need only point your browser to your local computer (e.g., <http://localhost:8080>) and you can analyze your data. You don't even need access to the Internet for this type of setup.

At the other end of options, if you intend to offer addVANTAGE Pro services to other users, running tens or hundreds of RTUs, you most likely will want to install the software on a powerful server with a good connection to the Internet. A fixed IP address is mandatory in this case.

In many cases you might not want to run a server at all and would rather use the addVANTAGE Pro services offered by an addVANTAGE Pro service provider as described in the previous paragraph. You need only a web browser, an Internet connection, and an account (possibly subscription-based) with your addVANTAGE provider.

If you plan to install an addVANTAGE Pro server (however small or large), please continue reading. If you are not installing the addVANTAGE Pro 6.4 software, you can go directly to ["Navigating the Data" on page 21](#).

The following sections guide you through the installation and initial configuration of your addVANTAGE Pro server.

The Short Path from RTUs to addVANTAGE Pro

For those of you eager to start seeing and using the RTU data in your addVANTAGE Pro software, below is a summary of the steps you have to follow:

1. Install addVANTAGE Pro (more details are in ["Installing the Software" on page 15](#)).
2. Start the addMIN utility to enter the server license information (more details are in ["Entering the Licensing Information" on page 17](#)). Then start addVANTAGE Pro server (see ["Starting the Server" on page 19](#)).
3. Connect to the addVANTAGE Pro server by opening your browser and pointing it to the IP address of your server (see ["Connecting to addVANTAGE Pro" on page 20](#)).
4. If you have not configured your Telemetry Gateway, read the respective manual to learn how to configure your base station. If you have already configured your Telemetry Gateway, you can skip this step.

5. Configure the Data Acquisition service (use **Tools ▶ Data Acquisition**); this service is responsible for retrieving data from the Telemetry Gateway (more details are in ["The Data Acquisition Service" on page 50](#)). You must also configure at least one server (either a Telemetry Gateway or another addVANTAGE Pro 6.4 server).
You can add a new data source by using **Tools ▶ Data Acquisition** and clicking **New** or by clicking the RTU creation wizard icon on the toolbar and selecting the dropdown on page 2/5 and selecting **Create new**.
6. Add an RTU by right-clicking an area in the addVANTAGE Pro Explorer and selecting **Create New Node ▶ RTUs/Tags from** (read more in ["Retrieving Data from a Server" on page 53](#)). You can also use the RTU creation wizard described on [page 54](#) to create an RTU. After you are done, expand the area in the explorer to see the newly added RTU with its underlying sensors.
7. Click the magnifying glass icon next to the new RTU to view its data.

Server Installation

This section describes what you must do before installing the software, provides the installation steps, and describes how the software might affect your system.

Installing the Software

Before installing addVANTAGE Pro on your computer, be sure that you uninstall any previous addVANTAGE Pro installations you have (use the Uninstaller in the **addVANTAGE Pro** program group).

To install the addVANTAGE Pro 6.4 server, complete the following steps:

1. Insert the distribution CD-ROM in your computer's CD drive.
2. Using the Explorer, navigate to the CD, locate the program `install.exe`, and double-click the file to launch it.
3. Follow the instructions given by the setup wizard.
4. During the installation you will be asked to select a home directory for addVANTAGE Pro. Adcon recommends that you keep the suggested default directory (`\addVANTAGE-Pro`).

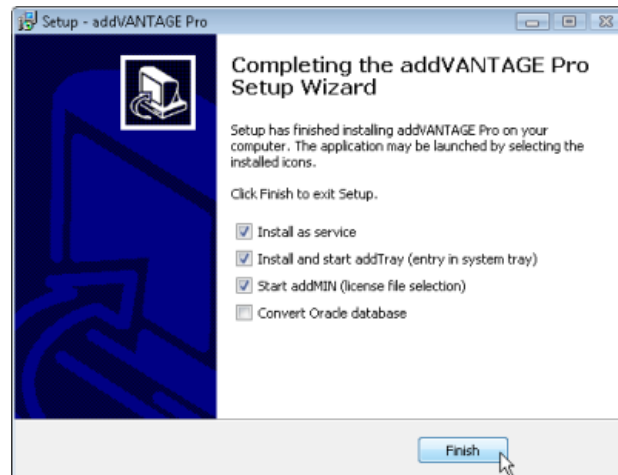


CAUTION

If you need to change the default installation directory, don't use names containing spaces in the path.

5. After all files are copied, a dialog displays so you can preconfigure the following operational parameters (see [Figure 3](#)):
 - a. The first checkbox allows you to enable the addVANTAGE Pro server to run as a Windows service; as a service the server will run in the background even if no user is logged into the machine.
 - b. The second checkbox allows you to add the addVANTAGE Pro server status to the Windows system tray.
 - c. With the third checkbox, you can start the addMIN utility, which is described in ["The addMIN Utility" on page 17](#).

- d. If you have a pre-version-6.2 Oracle database, you can use the last checkbox to convert the database for use with the updated version of addVANTAGE Pro.

Figure 3. Post-installation Options

Note: *It is generally recommended that you keep the default selections in the installation software unless you have specific reasons for changing them.*

6. The installer attempts to keep the customized .properties and .xml files after an upgrade. If the procedure fails (for example, if the customer AND Adcon have updated the same file), check the \logs\install.log file for errors.

After the Installation

The installation program creates a new directory on your hard disk (named addVANTAGE-Pro by default), where it copies all the files the software needs.

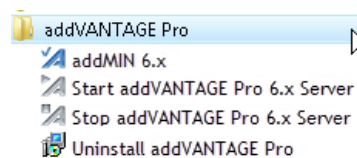
If you decide to remove the software later, you can do so from the Windows Start menu by navigating to **Start ▶ All Programs ▶ addVANTAGE Pro ▶ Uninstall addVANTAGE Pro**.

The database is stored in the addVANTAGE-Pro home directory. If you delete the database, you will lose all the collected data. The Uninstaller program will not delete it and, in fact, you should not manually delete any directory.

The following programs are installed on your computer:

- **addMIN 6.x** starts the addVANTAGE Pro Server's Administration utility.
- **Start addVANTAGE Pro 6.x Server** starts the server.
- **Stop addVANTAGE Pro 6.x Server** stops the server.
- **Uninstall addVANTAGE Pro** is used to uninstall the current version of addVANTAGE Pro.

The executables listed above have a link in the **addVANTAGE Pro** menu group (see [Figure 4](#)).

Figure 4. Programs Installed in the addVANTAGE Pro Group

In addition to the above programs, the following two utilities are installed in the addVANTAGE-Pro\bin directory:

- **service.bat** controls the use of the server as a service. It has the following two parameters:
 - `service install` installs the server as a service under Windows 2000 and XP.
 - `service remove` removes the server as a service under Windows 2000 and XP.

- **convert.bat** opens the interface you use to convert old databases. See ["addVANTAGE Pro Versions 5.1 through 6.1" on page 89](#) for a description of this utility.

First Steps

In this section you will:

- Learn about the addMIN utility
- Start the server
- Connect to the addVANTAGE Pro server using a web browser
- Stop the server

The addMIN Utility

Use the addMIN utility to administer your server. With the addMIN software, things you can do include:

- Enable and disable extensions
- Enter licensing information

In fact, before launching the addVANTAGE Pro Server, you must enter the licensing information or you will be unable to launch it. If you don't have a license file, please contact your Adcon distributor or Adcon Telemetry (info@adcon.at).

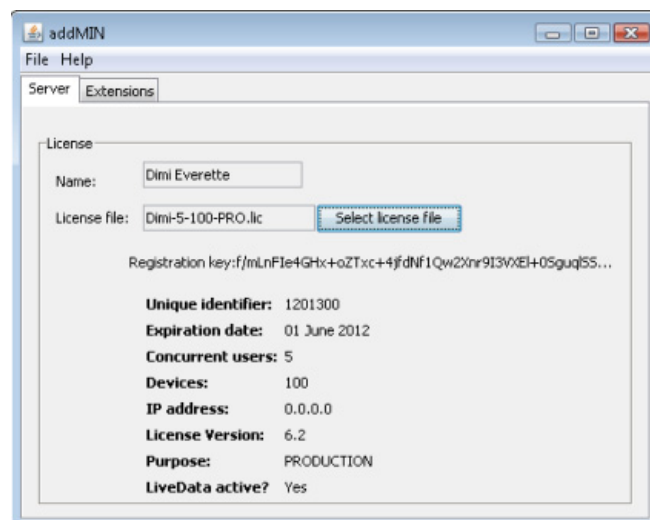
To start the addMIN utility select **Start ▶ All Programs ▶ addVANTAGE Pro ▶ addMIN 6.x**.

Note: You must run the addMIN utility on the same machine as the addVANTAGE Pro server.

Entering the Licensing Information

Before you proceed, copy the license file you received to a directory on your computer. To read the licensing information, start the addMIN utility and click the **Server** tab. Click the **Select license file** button, browse to the directory where you placed the license file and select it. If the license file is valid, a dialog similar to the one shown in [Figure 5](#) displays your licensing information.

Figure 5. Editing the License Information in the addMIN Utility



You will also see a pop-up message asking if you want to register the license. You cannot start the server until the license has been registered, so click **Yes** to continue.

Installing Free Extensions

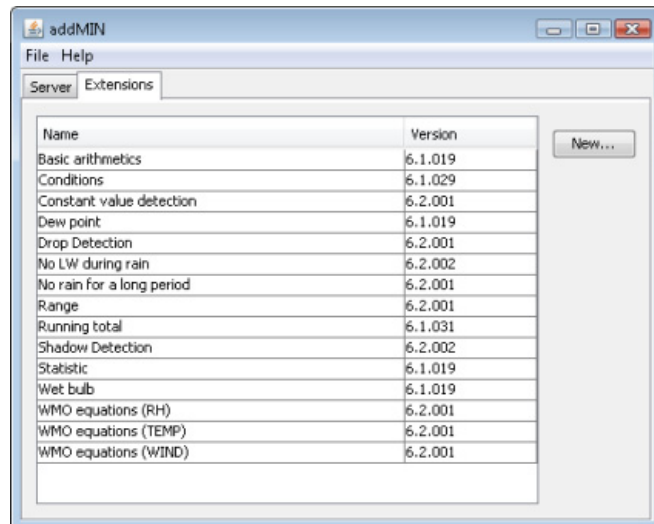
During the installation of the addVANTAGE Pro server, some general purpose extensions are also automatically installed on your system. If you are using addVANTAGE Pro as an agricultural decision support system, your Adcon distributor might have supplied you with a separate CD containing plant protection and irrigation extensions. If you plan to use any of these extensions,

you must install this package as described below; otherwise, you can skip this section.

To install the extensions package, complete the following steps:

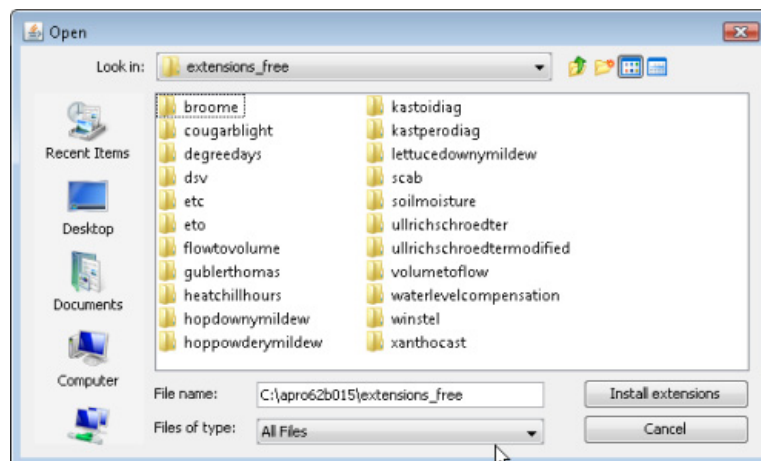
1. Insert the distribution CD-ROM in your computer's CD drive.
2. Navigate to **addVANTAGE Pro ▶ addMIN 6.x**.
3. Select the **Extensions** tab to display the dialog shown in [Figure 6](#).

Figure 6. addMIN Extensions Tab



4. Click the **New** button. In the Open dialog that appears, navigate to the `extensions_free` folder.
5. Double-click the `extensions` folder (yours might be named differently) to display the dialog shown in [Figure 7](#).

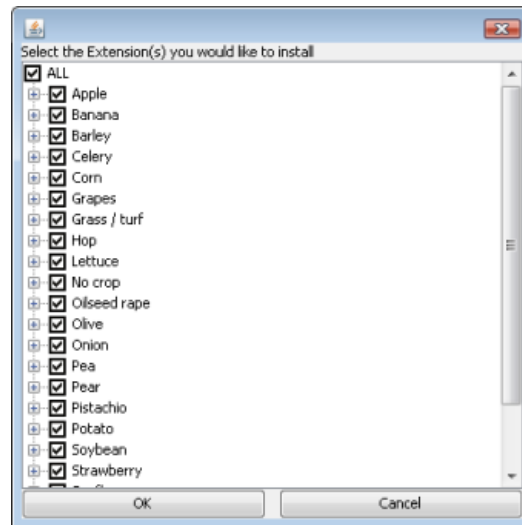
Figure 7. Locating Extensions to Install



6. Do one of the following:
 - To select all of the extensions, click **Install extensions**.
 - Select one folder, then click **Install extensions**.

7. A dialog showing the available extensions based on your selection is displayed (*Figure 8*). Select the checkbox for each extension you want to install, or click the **All** checkbox to install all of the available extensions.

Figure 8. Free Extensions Available to Install



8. Click **OK**.
9. The License Agreement for the free extensions is displayed. You must read and select the **Accept** button to proceed.

The extensions appear on the **Extensions** tab of the addMIN utility.

To add other extensions, follow steps 6 through 9 above.

For more details about using these extensions, refer to the *addVANTAGE Pro 6.1 Extensions and Crops* manual. You will find this manual on the distribution CD, or you can download it from Adcon Telemetry's web site at <http://www.adcon.at>.

Starting the Server

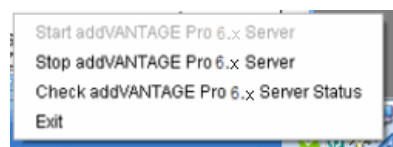
Use **Start ▶ All Programs ▶ addVANTAGE Pro ▶ Start addVANTAGE Pro 6.x Server** to start the server. Depending on the speed of your machine, allow approximately two minutes for the server to start. If you chose to install the addVANTAGE Pro Server Monitor during the setup procedure (see "*Installing the Software*" on page 15 and *Figure 9*), you will be able to supervise the startup process to make sure it concludes successfully.

Figure 9. Monitoring the Server Status



In addition, you can control the startup and shutdown of the server through the Server Monitor, which is available in the Windows task bar. If you click the Server Monitor icon, you can check the server's status, start it up or shut it down (*Figure 10*).

Figure 10. Starting addVANTAGE Pro through the Server Monitor



If you did not choose to install the server as a service during the setup procedure, the server will stop as soon as you log out of Windows. However, if you use Windows 2000 or XP, you can install the server as a Windows service (recommended), which allows you to log out and leave the server running in the background. In addition, every time you start your computer, the server also starts automatically.

Installing the Server As a Service

If you did not install the server as a service, you can do so at any time as described below (you must log in as administrator to perform this operation):

Note: *The appearance of the Services utility differs slightly between different Windows platforms.*

1. If you have not already done so, select **Start ▶ All Programs ▶ addVANTAGE Pro ▶ Stop addVANTAGE Pro 6.x Server** to stop the server.
2. Open a terminal shell (a DOS prompt) and navigate to the \addVANTAGE-Pro\bin directory.
3. Type `service install`.
4. Select **Start ▶ Control Panel**.
5. Select the **AdminTools** icon, then select the **Services** icon.
6. Locate the addVANTAGE Pro 6.x service and double-click it.
7. In the pop-up, click **Start** to start the service.

Not Using the Server As a Service

If you want to stop using the addVANTAGE Pro server as a service, you must follow steps 4 to 6 in the previous section, but instead of starting the service at step 7, click **Stop**.

The Services dialog shows the following three **Startup type** choices:

- **Disabled** means the service cannot be started manually or automatically.
- **Manual** means you must start the service each time you want to use it (that is, perform steps 4 through 7 mentioned above).
- **Automatic** means the addVANTAGE Pro Server will be started when you start your PC.

Uninstalling the Server As a Service

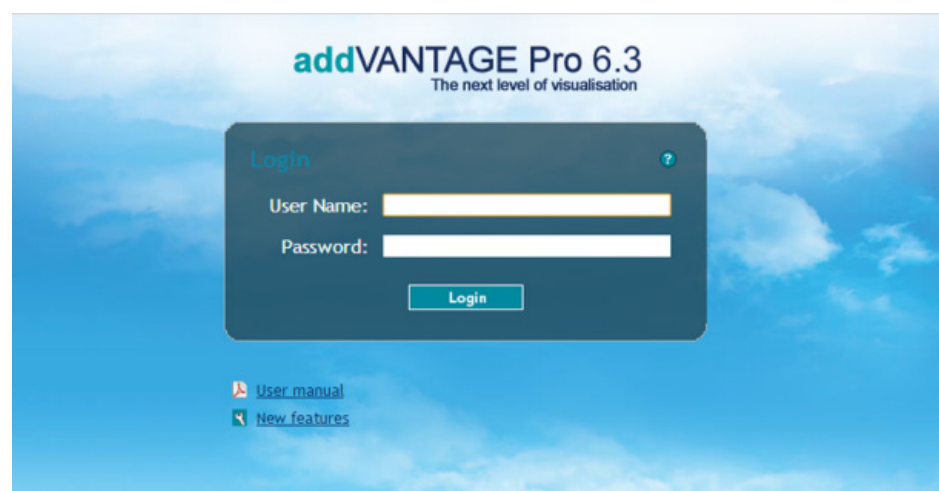
If you want to uninstall the service completely, perform steps 1 and 2 from *"Installing the Server As a Service" on page 20*, but at the DOS prompt, type `service remove` instead.

Connecting to addVANTAGE Pro



You connect to addVANTAGE Pro by starting your browser and entering the URL of your server, for example, `http://addvantage.adcon.at:8080`. A web page similar to the one in *Figure 11* is displayed in your browser.

Note: *If your browser runs on the same machine as the addVANTAGE Pro server you can also use the URL `http://localhost:8080`.*

Figure 11. addVANTAGE Pro Login Window



If you need browser information for logging in, you can click the question mark (?) on the login window. A page with login help is displayed.

You can also see the documentation before you log in, or get a preview of the new features. Click the  [User manual](#) or  [New features](#) icon as needed.

Enter your **User Name** and **Password** and click the **Login** button to access the system.

Note: *The first time you log in, use the root account with the default password root. You should change the default root password as soon as possible. For more details see ["Administering Users, Groups, and Roles" on page 27](#).*

If the account data was correct, you are logged in to addVANTAGE Pro and an Explorer window showing you the root node appears. For more information about the Explorer, see ["The Explorer" on page 21](#). If you want to disconnect from the server, click the **Logout** button.

Stopping the addVANTAGE Pro Server

To shut down the server, select **Start ▶ All Programs ▶ addVANTAGE Pro ▶ Stop addVANTAGE Pro 6.x Server**. Alternatively, you can use the Service Monitor in the Windows task bar to stop the server.

Navigating the Data

The main elements of the software are:

- The Explorer
- The List
- The Trend viewer
- The Events viewer
- The Map viewer
- Administration tools
- Extensions

Logging in to the Server

To start your addVANTAGE Pro session, follow the steps in ["Connecting to addVANTAGE Pro" on page 20](#).

The Explorer

After you have logged in, the browser will display the opening page of addVANTAGE Pro. This is called the *Explorer* because it allows you to explore all the objects in an addVANTAGE Pro system.

Note: *Your browser window might be resized when you log in to addVANTAGE Pro.*

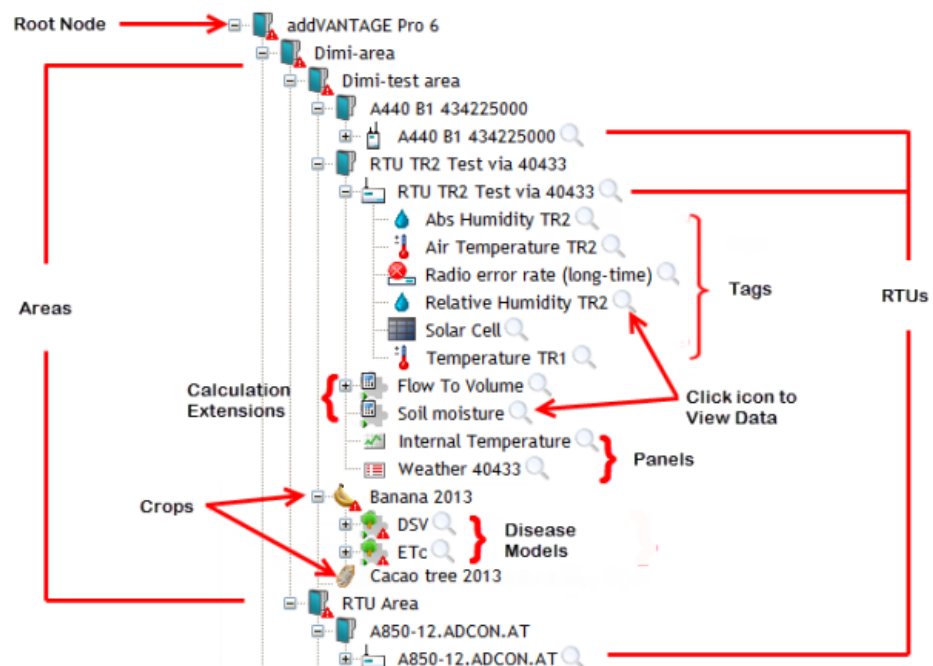
Objects in the Explorer

Use the Explorer to navigate through all the objects in your system: areas, RTUs (devices), tags (sensors), extensions, and panels. All such objects are generically called *nodes*. You can open more than one Explorer at once, each showing different levels of the system tree. You can also move certain node types from one area to another.

After opening an Explorer, expand the root node, which will probably show only areas, RTUs, and tags. In order to familiarize you with the new terms, [Figure 12](#) shows most of the node types available in the tree structure. You probably won't have all of them in your tree, but you will be able to generate them later.

The *root node* contains all the objects in a system. You can also think of it as the container for the database on a server.

Figure 12. Expansion of Root Node in Explorer



An *area* is an object that defines a certain place that you have associated with a specific property. It can be a field, a city, a section in a plant, a country, or any other physical place. You can also have areas within areas, or subareas.

An *RTU* is placed in an area. You can have as many RTUs in an area as you want—limited only by the type of license you own and the remote server or Telemetry Gateway you are downloading data from. All the RTUs in a certain area have the common property that they belong to that area.

The RTUs have *tags*, which can be sensors or actuators. A tag can also result out of the processing of other tags by an extension.

Crops act as containers for extensions (calculations or disease models) that are specific to one crop field in one year. Crop nodes have all the required phenological phases, irrigations, and treatments.

Calculation extensions are types of embedded software that process input tags following certain rules and output events or other tags (virtual tags). This type of extension can also control output tags (actuators), effectively implementing remote control functions. Calculation extensions apply to an area rather than a crop.

Disease models are types of embedded software that track the progress of common diseases that are specific to a crop. They are always the children of a crop node.

Panels are the result of saving a view. For example, if you create a Trend and want to refer to it later (see [page 62](#)), you can save it as a panel.

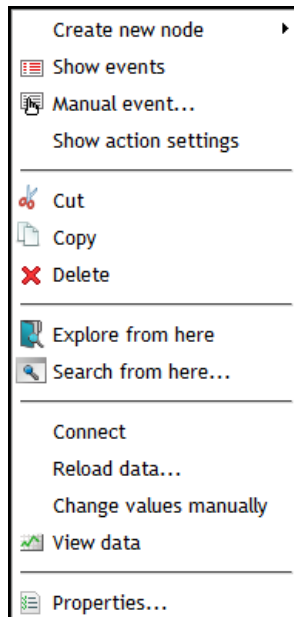
Functions in Explorer

As the “main window” in addVANTAGE Pro, the Explorer offers many features. In addition to the usual expand/collapse of branches by clicking the plus (+) or minus (-) sign, you can rename a node just by clicking the name twice.

You can also right-click a node and see a variety of options on the context menu, depending on the node type and the permissions your user ID has. [Figure 13](#),

for example, shows the context menu for a tag for someone with admin permissions.

Figure 13. Right-clicking a Tag in Explorer



These features are discussed below and in other sections of this book.

Rename Node

Follow these steps to rename a node:

1. Click once to highlight the node you want to rename (left side of [Figure 14](#)).
2. Click the node again to turn the name into an edit box (right side of [Figure 14](#)).
3. Type the new name.
4. Press **Enter**.

Figure 14. Renaming Nodes



Create New Node

Create nodes such as areas, windows, extensions, crops, and tags.

It is important to note that although you can add as many areas, extensions, and panels as you want, you cannot add RTUs and tags directly through the Explorer. You can add RTUs and tags by using the Data Acquisition Service, which you access by right-clicking an area and selecting **Create New Node ▶ RTUs/Tags From** (for more about this feature, see ["Retrieving Data from a Server" on page 53](#)).

Show Events

Open a list panel showing the events on the node and all of its subnodes.

Manual Event

When you right-click a node in the Explorer, you'll see a **Manual event** choice. Select it to display a dialog similar to the one shown in [Figure 15](#).

Figure 15. Creating a Manual Event

The dialog box for creating a manual event contains the following fields and controls:

- Source:** A text field containing the value "Temperature".
- Begin Date:** A date and time picker showing "Jan 19, 2010 9:52 PM".
- Duration:** Three input fields for days (d), hours (h), and minutes (m).
- Severity:** A dropdown menu currently set to "Event".
- Comments:** A large, empty text area for entering event details.
- Buttons:** "OK" and "Cancel" buttons at the bottom right.

1. In the **Begin Date** field, enter or select the date you want to be associated with the event.
2. Leave the **Duration** fields blank if this is an active event. Otherwise, enter a zero for days, hours, or minutes to indicate a simple, one-time event.
3. Select a **Severity** level from the dropdown. Your selection determines whether the manual event is shown as an **Alarm**, **Event**, or entry in the **Service log**.
4. Enter the **Comments** that will be displayed in the Events viewer.
5. Click **OK** to close the dialog.

Show Action Settings

Opens a dialog that lists the Action settings of the selected node and its children. With this dialog, you know at a glance which Actions have been executed, such as when the threshold was reached.

Explore from Here

Open a new Explorer with this node as the root.

Search from Here

Search only this part of the Explorer.

Connect To

Connect the node to the server by selecting the server and choosing the device from the dialog that appears.

Reload Data

Retrieve data from the server.

Note: You need another addVANTAGE Pro server, an A840 (firmware release 3.8.0 or higher) or an A850 Telemetry Gateway, to be able to retrieve remote data.

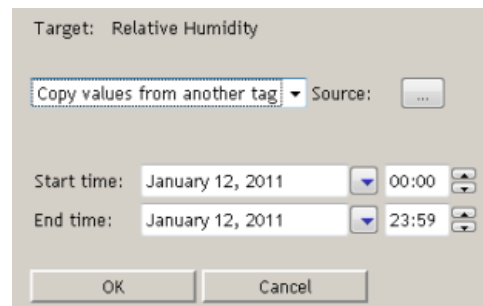
Change Values Manually

You might find that the values on one sensor have data errors or need to be marked as bad. You can use this feature to change the values manually. Follow these steps:

1. Right-click the tag whose values you want to replace.

2. Select **Change values manually** to display the dialog shown in [Figure 16](#).

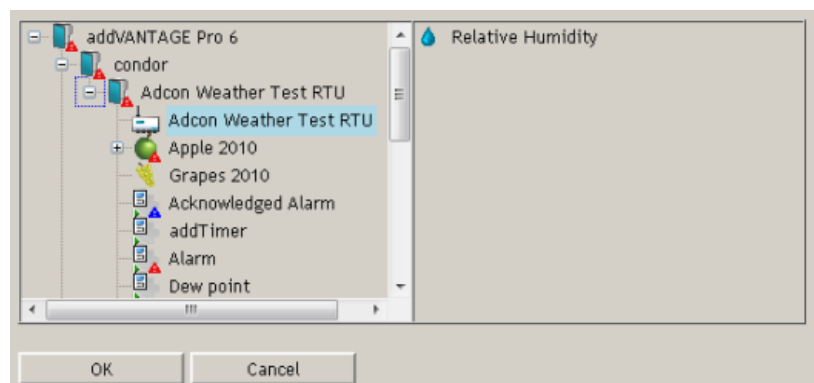
Figure 16. Change Values Manually Dialog



Target shows which value you selected to change.

3. Click the down arrow next to **Source** to choose what you want to do:
 - **Copy values from another tag**
Select this when you know another tag has the correct values and you want to copy them to the current tag. Continue with step 4.
 - **Mark values as BAD**
Select this to mark a range of values as incorrect. Skip to step 7.
 - **Remove manual values**
Select this to replace manual values with automatic values for a range. Skip to step 7.
4. Click the **Source** field to display a Tag Chooser dialog similar to the one shown in [Figure 17](#).

Figure 17. Tag Chooser Dialog



5. Click the appropriate station in the left pane, then select the tag with values you want to copy in the right pane.
6. Click **OK** to return to the Change Values Manually dialog.
7. Enter the **Start time** and **End time** for the values to copy, mark as bad, or remove.
8. Click **OK**.
If you copied values from another tag, you'll see that where the values for both sensors are the same, the old are overwritten by the new.

View Data

Open a Trend panel to see data from the node's children.

Show on Map

View the location of the selected RTU on a map.

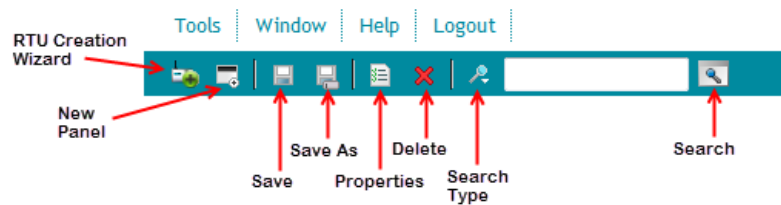
Properties

View and edit node-specific information.

Menubar and Toolbar

The menubar and toolbar in the Explorer ([Figure 18](#)) provide different ways to access the features of addVANTAGE Pro 6.4.

Figure 18. The Menu Bar and the Toolbar



Menubar

- **Tools:** accesses addVANTAGE Pro 6.4 user options and other administrative tools.
- **Window:** refreshes the current window and allows you to select an addVANTAGE Pro 6.4 window when multiple windows are open
- **Help:** displays the documentation and information about the software.
- **Logout:** exits the addVANTAGE Pro 6.4 software.

Toolbar

- **RTU Creation Wizard:** starts a wizard that helps you create an RTU.
- **New Panel:** creates a new Events viewer, Explorer, List, or Trend.
- **Save:** saves the settings of the window or panel you have the focus on.
- **Properties:** shows the properties of the selected node.
- **Delete:** deletes objects you have selected in the Explorer.
- **Save As:** enables you to save the current window or panel with a different name.
- **Search Type:** provides a quick search option to select an object from the popup and then type search criteria in the text field.
- **Search:** displays the advanced search dialog with more specific options.

Chapter 3. Security Features

addVANTAGE Pro's security is maintained through its users, groups, and roles. Everyone who uses the software has a *user ID*, which identifies him or her to the system. Each user belongs to one or more *groups*, which determine the types of nodes and services a user has access to. Each user is also assigned a *role*, and the role determines which actions the user can perform in addVANTAGE Pro. These system features ensure that your data is secure because you have allowed access to only those users who need to work with it.

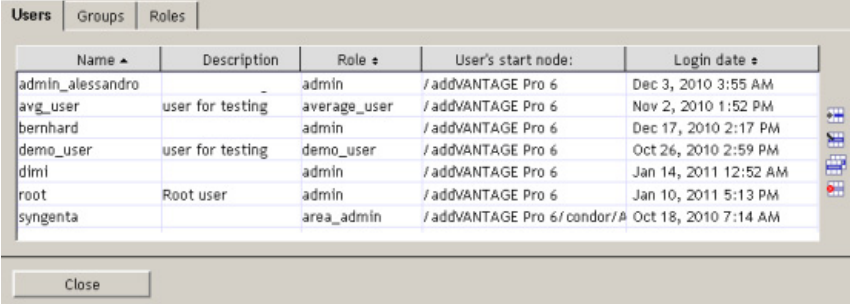
Administering Users, Groups, and Roles

The Security Service allows an administrator, or a user with administrator rights, to control users, groups, and roles in the system. An administrator can:

- Create, edit, and delete users, groups, and roles
- Assign users to groups and roles
- Change privileges, passwords, and other options

To work with users, groups, and roles, select **Tools ▶ User management ▶ Users and Groups**. The Users and Groups dialog is displayed ([Figure 19](#)).

Figure 19. Users and Groups Dialog



Name	Description	Role	User's start node	Login date
admin_alessandro	-	admin	/ addVANTAGE Pro 6	Dec 3, 2010 3:55 AM
avg_user	user for testing	average_user	/ addVANTAGE Pro 6	Nov 2, 2010 1:52 PM
bernhard		admin	/ addVANTAGE Pro 6	Dec 17, 2010 2:17 PM
demo_user	user for testing	demo_user	/ addVANTAGE Pro 6	Oct 26, 2010 2:59 PM
dlm		admin	/ addVANTAGE Pro 6	Jan 14, 2011 12:52 AM
root	Root user	admin	/ addVANTAGE Pro 6	Jan 10, 2011 5:13 PM
syngenta		area_admin	/ addVANTAGE Pro 6/ condor/A	Oct 18, 2010 7:14 AM

Working with Users

The Users and Groups dialog displays the **Users** tab by default, as you can see above in [Figure 19](#). Use this tab to add, edit, copy, and remove users.

Adding, Editing, Copying, and Removing Users

On the main Users and Groups dialog, click the **Add** icon to display the dialog shown in [Figure 20](#).

Figure 20. Adding a User

The dialog box titled 'Adding a User' has five tabs: 'User', 'Groups', 'Role', 'Default Privileges', and 'User options'. The 'User' tab is selected. Under the 'Security settings' section, there are the following fields and controls:

- User Name:** A text input field.
- Full Name:** A text input field.
- Description:** A text input field.
- Password:** A text input field.
- Confirm Password:** A text input field.
- Session time out:** A numeric input field with '30' entered. To its right, it says 'min: 5 minutes; max: 60 minutes'.
- Need the password for WAP access:** A checkbox that is checked.
- User's start node:** A text field containing '/addVANTAGE Pro 6'. Below it is a 'Change...' button.

At the bottom of the dialog are 'OK' and 'Cancel' buttons.

Entering User Information

Follow these steps to add a user:

1. Enter a **User Name**, which is the name that a user will type to log in.
2. Enter the person's **Full Name**, which is that user's actual name. (optional) The field is important only to the administrator to provide more information about the user.
3. Enter a **Description** to convey even more information about a user. (optional)
4. Enter the **Password** the user will type to log in.
5. Enter the password again in the **Confirm Password** field to verify that you entered the password the way you intended to in the previous field.
6. The default setting for WAP access is to require the user's password. You can unselect the **Need the password for WAP access** checkbox if needed.
7. You can accept the default **Users start node** or click **Change** and select a different node from the dialog that appears. This field specifies what the user sees as the root node.
8. Enter the user's **E-mail address**. (optional)
9. Enter the user's **Phone number**. (optional)

To edit a user, highlight the ID in the main Users and Groups dialog and click the **Edit** icon. A dialog similar to the one shown in [Figure 20](#) appears, and you can edit the necessary fields as well as settings on the other tabs.

To copy a user, highlight the ID in the main Users and Groups dialog and click the **Copy** icon. By doing so, you add a new user with all the same characteristics as the original, except the name. A dialog similar to the one shown in [Figure 20](#) appears, and you can make any changes you want on the tabs.

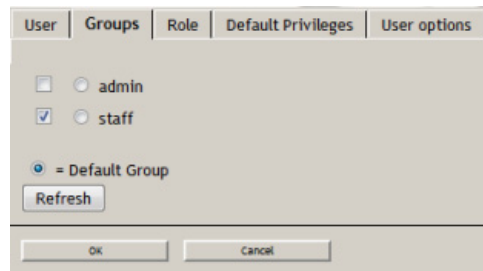
To remove a user, highlight the ID in the main Users and Groups dialog and click the **Remove** icon.

Assigning Users to Groups

Users can be assigned to one or more groups. Being assigned to more groups allows users to have privileges to read or write objects in the system (areas, RTUs, extensions, and panels) that do not explicitly belong to them. The group you belong to determines whether you can see or change specific nodes.

To assign groups, select the **Groups** tab, then click the checkbox in front of each group you want the user to belong to. [Figure 21](#) shows the tab with the default groups, but if you added any, they are also displayed.

Figure 21. Assigning a User to One or More Groups



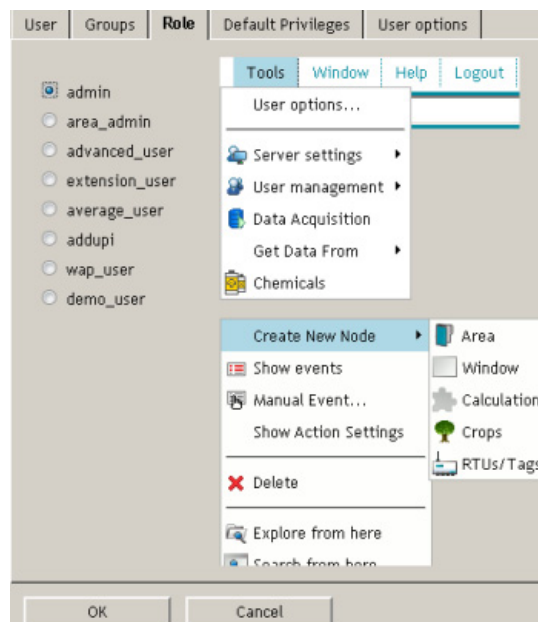
A user also needs a default group, which is used to identify objects the user creates. Choose the default group by selecting the appropriate radio button. Every object the user creates will belong to that group and have its permissions. It is a good policy for most of your users to have the default group of **staff**, reserving the **admin** group for administrators. Click the **Refresh** button to add groups created while you were creating the current users. Any new groups will appear in the dialog.

Assigning Roles to Users

In addition to belonging to a group, a user needs a default role. Roles determine the actions a user is allowed to perform, such as editing an area or viewing e-mail settings.

To assign a role to a user, select the **Role** tab, then select one of the role radio buttons ([Figure 22](#)).

Figure 22. Assigning a Role to a User



If you are unsure which role the user should have, you can click each role to see the permissions a user has for the Tools menu and the context menu in Explorer. You can also select the Users and Groups dialog's **Roles** tab ([Figure 27](#)) and see the privileges assigned to each role.

Assigning Privileges to Users

Use the next tab, **Default Privileges** (Figure 23), to set the default privileges for the selected user. The values selected in this dialog are used for any new object the user creates: panels, RTUs, extensions, and so on.

Figure 23. Setting a User's Default Privileges

The significance of each is as follows:

- **Owner:** choose whether this user can change (**Read & Write**) or only view (**Read Only**) the objects he or she created. You can also select to give the user no privileges (**None**) to these objects.
- **Group:** choose whether users in this user's group can have the same as or different privileges from those described above for the Owner.
- **Everyone:** choose whether users not in this user's group can have the same as or different privileges from those described above for the Owner and Group.

Entering User Options

Use the final tab, **User options** (Figure 24), to set defaults for a user's profile that he or she can update, depending on the role.

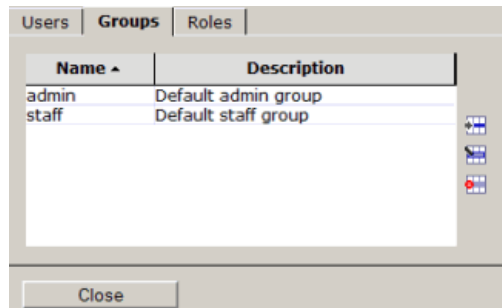
Figure 24. Setting User Options

You'll find full explanations of the user options in the next chapter, [Node Properties and Tools](#).

Working with Groups

Click the **Groups** tab on the Users and Groups dialog to add and remove groups in the system (see [Figure 25](#)).

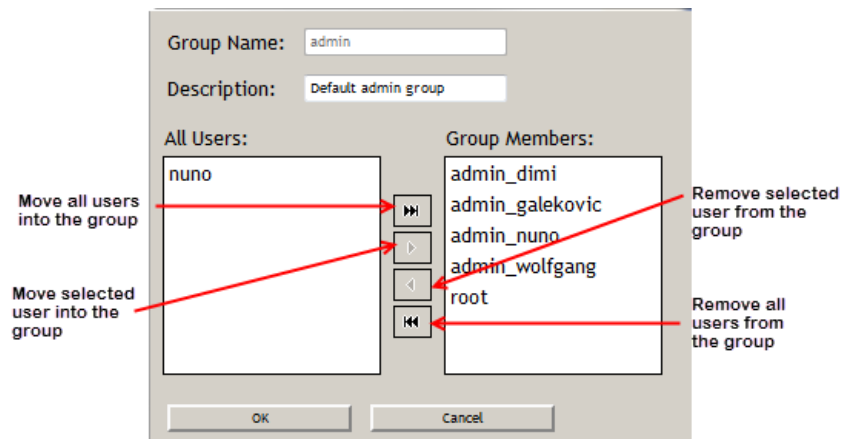
Figure 25. Groups Tab of the Users and Groups Dialog



The admin and staff groups are available by default. If you click the **Add** icon, you'll see a dialog asking for a **Group Name** for the group you want to create. Remember that all nodes belong to the group assigned by the user's ID.

You can click the **Edit** icon to display the dialog shown in [Figure 26](#). Use this dialog to change the description of the group or add users to and remove users from the group.

Figure 26. Editing a User Group



Assigning users to a group does not mean they can access a resource. They must also have sufficient role privileges for the object they want to access.

Working with Roles

User *roles* further define what a user can and cannot do. A user can belong to more than one group, which can increase the number of node types he or she can view, but only if the role permits it. Users can have only one role—and it is the role that defines what actions they can and cannot perform.

For example, most users will fit into the **average_user**, **extension_user**, or **advanced_user** role and be assigned to the **staff** group. Those assignments give your users the permissions they need for the tasks they must perform. It is better to think of the **admin** group as belonging only with the **admin** role. Overall, only your administrator (probably you!) should be assigned the **admin** role and should belong to the **admin** group. Other users can be assigned whatever role is suitable, but should be assigned to the **staff** group, unless you create another group for them.

Click the **Roles** tab on the Users and Groups dialog to view the actions permissible for the role assigned to the current user (see [Figure 27](#)).

Figure 27. Roles Tab of the Users and Groups Dialog

Action	admin	area_admin	advanced_user	extension_user	average_user	addupi	wap_user	demo_user
NODE_UPDATE_PERMISSION	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
NODE_UPDATE_OWNER_SETTINGS	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
NODE_ADVANCED_SETTINGS_VISIBLE	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
NODE_PROPERTIES_VISIBLE	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
NODE_EXTENSION_PROPERTIES_VISIBLE	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
NODE_CROP_PROPERTIES_VISIBLE	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PANEL_CREATE	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PANEL_READ	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
PANEL_WRITE	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PANEL_DELETE	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PANEL_OPTIONS_READ	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PANEL_OPTIONS_WRITE	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
EXTENSION_CREATE	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
EXTENSION_READ	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
EXTENSION_WRITE	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
EXTENSION_DELETE	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

You cannot currently make any changes here. We have kept the **Defaults** button for a future release.

Defined Roles

addVANTAGE Pro defines several roles that users can be assigned to. Users created on the system can belong to one or more groups, but they can be assigned only one role. These roles, which cannot be deleted, are as follows:

- **admin**—The user `root` has this role by default. The role allows all actions in addVANTAGE, without any restriction in node visibility.
- **area_admin**—This role is recommended for users who manage devices. It has many of the privileges of the `admin` role, but does not allow creating or updating data sources, users, email settings, or log monitor updates.
- **advanced_user**—This role is for users who know addVANTAGE quite well and have sufficient knowledge to perform complex tasks. Its privileges are similar to those of the `area_admin`, except it also disallows node updates, reading data sources, updating chemicals, and log monitor permissions.
- **extension_user**—This role is for standard users who need to work with crops and extensions. It offers the permissions of the `average_user` role as well as the ability to create crops and extensions and view their properties.
- **average_user**—This role is for standard users who don't have detailed knowledge about addVANTAGE and the Adcon system. It offers read and write permissions for panels, crops, and areas.
- **addupi**—This role is not directly for human users, but for client applications that acquire data using addUPI. It offers permission only to access devices and tags and perform function calls on them.
- **wap_user**—Users with this role access addVANTAGE from their WAP-browser (normally a mobile phone). They are only allowed to view data of tags.
- **demo_user**—Users with this role are typically people who are trying out addVANTAGE Pro and need to see only the main features. These users have no knowledge of or experience with addVANTAGE Pro or the Adcon system. The only privileges with this role are reading panels and areas.

Chapter 4. Node Properties and Tools

The robust Properties and Tools features in addVANTAGE Pro are the building blocks of the system. Properties let you tinker with node settings such as whether a node is connected to the server and what to do when a threshold is reached. The tools options affect system-wide settings such as data acquisition and e-mail.

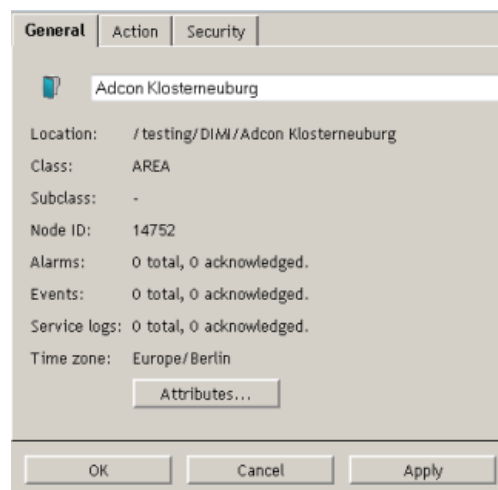
The tabs you see on the Properties dialog depend on the node type and, in some cases, your user role.

Node Properties

When you right-click a node in Explorer and select **Properties**, you have the option to view and edit various features related to the node. The dialog that appears (*Figure 28*) has three default tabs—**General**, **Action**, and **Security**—but might have additional tabs, depending on the node type and your user role.

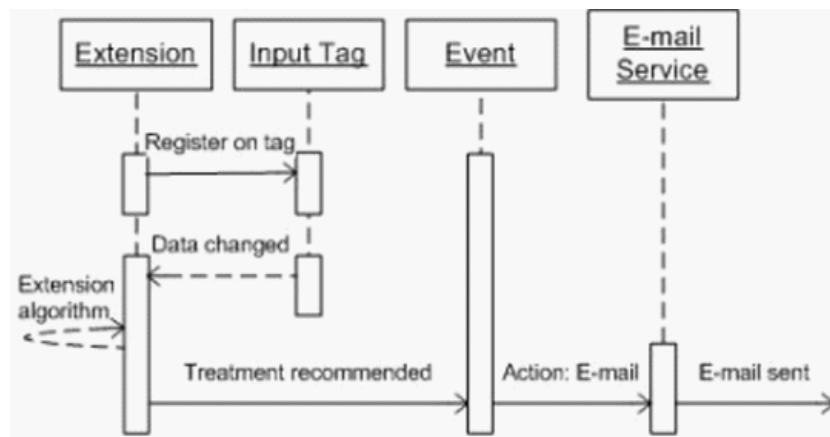
The **General** tab displays certain information about the node, such as its location and name. The **Action** tab enables you to set events and actions specific to the node itself. The **Security** tab shows the node's owner and the permissions various groups have in relation to the node.

Figure 28. General Tab of Node Properties Dialog



Node Action Properties

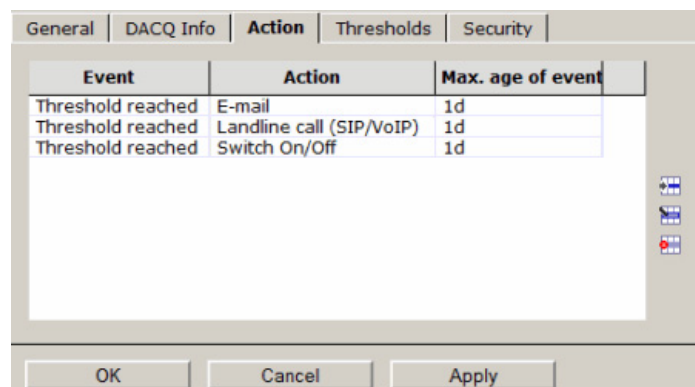
With the **Action** tab, you can specify the action that a certain event will cause. The example below illustrates the sequence that occurs when an extension's threshold event is "Treatment recommended" and action is "E-mail."



The extension registers itself as listener on the input tag (e.g. the Temp sensor) as soon as you set the Temp sensor as an input tag of the extension. A possible event of this extension is the "Treatment recommended" event. This means when you open the Action tab of this extension, the table shows the "Treatment recommended" event. For this event, you might choose to send an E-mail. As soon as this event is issued, the mail is sent. In any case, an issued event is always written to the node's event list.

Figure 29 shows the Action tab of the Node Properties dialog.

Figure 29. Action Tab of Node Properties Dialog



1. Click the **Add** icon to display the dialog shown in Figure 30.

Figure 30. Adding an Action

Node: Temperature
 Event: Manual event
 Action: E-mail
 Max. age of event: 1 d
 Recipients:

2. Select an **Event** from the list. The choices in the Event list depend on the node type. For a tag, the choices might include problems with the data or a threshold being reached. **Manual event** is a choice for every node type.
3. Select an **Action** from the list.

The following actions are available, depending on the node type:

- **Landline call (SIP/VoIP)** uses the Session Initiation Protocol (SIP) to make a landline call through the Voice over Internet Protocol (VoIP) to the **Recipients** you specify in the field below. For recipients who are

also system users, you can enter a shortcut in the format `user{name}`, such as `user{root}`. You can also specify a group as a recipient, such as `group{admin}`. The user's phone number, or the phone numbers of each member of the group, must be set in the system.

The administrator must verify the default SIP/VoIP settings and add any missing provider information before this option is available. See ["SIP/VoIP Settings" on page 47](#) for information about doing this.

When you select this action, you must enter the appropriate **Phone numbers** and, optionally, select the **Soundfile** you want to be played.

- **E-mail** sends an email to the **Recipients** you specify in the field below. In specifying recipients, you can enter full e-mail addresses in the format `name@address.extension`. For recipients who are also system users, you can enter a shortcut in the format `user{name}`, such as `user{root}`. You can also specify a group as a recipient, such as `group{admin}`. For multiple recipients, the order does not matter but you must separate each with a semicolon:
`user{dimi};m.weller@adcon.com;user{root}`

Note: In order to successfully send e-mails from addVANTAGE Pro, the e-mail service must be properly configured. See ["E-mail Settings" on page 46](#).

- **Switch On** switches on an output port of an RTU.
 - **Switch On/Off** switches on an output port of an RTU and instructs it to switch it off automatically after a predefined time elapses.
 - **Switch Off** switches off an output port of an RTU.
- If you defined the rule to issue a command (**Switch On**, **Switch Off** or **Switch On/Off**), you must click the **Node** button to select the tag to be acted upon. In the case of Switch On/Off, you must also specify how long the switch should be on (**Open time**)
4. Enter the day (**d**), hour (**h**), and minute (**m**) of the **Max. age of event**. In other words, if you enter 6 hours and 30 minutes, the action will not occur for the selected event if it happened more than six and a half hours ago. This field is helpful because you would likely find an event that happened two years ago uninteresting and you certainly wouldn't want a SIP call made because of it.
 5. Click **OK** to close the Add Action dialog.
 6. When you're finished with the Properties dialog, click **OK** to close it.

The next time the event you specified occurs in the node, the action you specified will happen.

You can **Edit** or **Remove** only those actions you created.

Node Security Properties

Use the **Security** tab ([Figure 31](#)) to set permissions for the node.

All of these settings show default values for the node. Our example of a tag's security settings shows that the owner is **dimi** and the tag belongs to the **admin** group. You will rarely need to change these settings, but you might want to assign different **Privileges**. Whether you can assign different privileges is determined by your account permissions.

Read and **Write** determine whether the node can be viewed (read) or edited (write). Therefore, you can use this dialog to determine the permissions the **Owner** of the node, the **Group** the node belongs to, and **Everyone** else has. You

can also select **None** for any of the fields to prevent anyone from viewing or editing the node.

Figure 31. Security Tab of Node Properties Dialog

For **Children Nodes**, you select whether to have child nodes get the same privileges as the user or the privileges of the node.

[Figure 31](#) also shows the **Availability** section. If you select the checkbox in this section, users who are not logged in will still be able to see the node. In the case of a trend, selecting the checkbox makes it publicly available.

If you want the security permissions to apply to all the nodes that the current node is the parent of, click the **Apply to all child nodes** button.

Following is a discussion of the tab options for specific node types.

RTU/Tag

[Figure 32](#) shows you the Properties dialog for a tag. One difference between RTU and tag properties is that you can set thresholds for a tag. A discussion of the **Thresholds** tab begins on [page 38](#).

Figure 32. General Tab of Tag Properties Dialog

The other difference between RTU and tag properties is the addition of the **Climate** setting for an RTU immediately above the Attributes button (Figure 33). You use this setting to select the type of climate applicable to the RTU's location. You can also click **Detect by GPS** to automatically select a climate setting based on GPS coordinates.

Figure 33. Climate Setting on RTU Properties Dialog



See *"Using the Climate Manager" on page 58* for information about climates.

Tag General Properties

Review the General tab for information about the tag, such as its class and subclass, node ID, number of alarms and events, engineering unit used, time zone of its server, and so forth.

Updating the addVANTAGE Pro Configuration

The tab also shows you the last time the software configuration database entries were updated, which will usually be midnight of the current day, unless it's set to update at another time. However, if you don't use automatic configuration—or if you just want to update the configuration now—click the **Update config now!** button. The system retrieves the current configuration from the server and updates the local one. If any special conditions are reached, an event could be issued (for example, if you specified an action based on an event such as the engineering units being changed, the event would be registered.)

Viewing Node Attributes

The **General** tab has an **Attributes** button. Click it to display the dialog shown in Figure 34.

Figure 34. The Attributes Dialog

Attributes		
Name	Type	Value
EUID	INTEGER	3500
acquisitionMode	INTEGER	
acquisitionSchedule	STRING	
manufacturer	STRING	Adcon Telemetry GmbH
maxValue	DOUBLE	20.0
minValue	DOUBLE	0.0
sdiAddress	STRING	
sdiIndex	INTEGER	
sdiInfo	STRING	
sdiMethod	STRING	
type	STRING	
version	STRING	

This dialog shows technical information about the tag's attributes. You close the dialog by clicking the **X** in the upper right corner.

Tag DACQ Properties

As Figure 35 shows, use this tab to view information about the source and connection status of the tag.

Figure 35. DACQ Info Tab of Tag Properties Dialog

General	DACQ Info	Action	Thresholds	Security
<p>Data source: Wolfgang-data </p> <p>Remote source ID: 2960</p> <p>Status: CONNECTED Disconnect!</p>				

You can click the link for the **Data source** to view and edit the properties of the data source. For information about editing data sources, see *"Configuring the Data Acquisition Service" on page 50*.

If you disconnect an RTU or tag on the DACQ Info tab, you will need to right-click the node in the Explorer and select **Connect To ► hostname**. Then select the device in the dialog that appears.

When a tag is acquiring data, the icon for the tag and for the RTU will display in the Explorer with a tiny moving arrow.

Tag Threshold Properties

Use the **Thresholds** tab (Figure 36) to set conditions that will trigger an alarm, event or service log entry when a threshold has been reached.

Figure 36. Thresholds Tab of Tag Properties Dialog

One of the actions you can set on the **Action** tab is for the **Threshold reached** event. Use the **Thresholds** tab to create the threshold that causes the action to occur, as detailed in the following steps:

1. Select whether to **Create "Threshold reached" event when** one of these choices is true:
 - **ALL conditions were met**
 - **ANY condition was met**
2. Add one or more conditions:
 - a. In the **Conditions** pane, click **Add**.
The dialog shown in Figure 37 is displayed.

Figure 37. Adding a Threshold Condition

- b. Click the **Condition** dropdown to select the threshold's condition. Following are the choices in this dropdown:
 - **is greater than**
 - **is greater or equal to**
 - **is equal to**
 - **is less or equal to**
 - **is less than**
 - **is between (incl)**
The values are inclusive.
 - **is between (excl)**
The values are exclusive.
 - **is between (incl - excl)**
The values include the first but exclude the last.
 - **is between (excl - incl)**
The values exclude the first but include the last.
 - c. In the **Value1** field, enter the condition's value.

- d. If you used any of the “**between**” conditions, enter the other value in the **Value2** field that appears. The following table describes how values are used with these conditions.

Condition	Sample Value 1	Sample Value 2	Condition Applies to
is between (incl)	2.0	5.0	2.0, 3.0, 4.0, 5.0
is between (excl)	2.0	5.0	3.0, 4.0
is between (incl - excl)	2.0	5.0	2.0, 3.0, 4.0
is between (excl - incl)	2.0	5.0	3.0, 4.0, 5.0

- e. Click **OK** to close this dialog and continue with adding a threshold.
3. In the **Event** pane, click the dropdown to choose whether this threshold will result in an **Alarm**, **Event**, or entry in the **Service Log**.
4. Add a **Remark** to be displayed with the alarm, event, or service log entry. (optional)

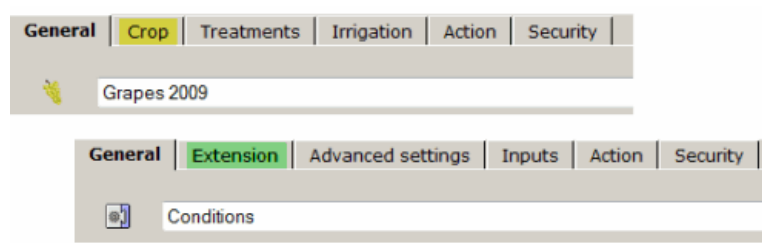
Panels

If you right-click a panel in the Explorer and select **Properties** from the context menu, the dialog shows only the three default tabs. To set up Lists, Trends, and Events, see [“Creating Panels” on page 60](#).

Extensions and Crops

If you right-click an extension or a crop in the Explorer and select **Properties** from the context menu, the dialog shows the default tabs illustrated in [Figure 38](#).

Figure 38. Default Tabs for Crop and Extension



To set up Extensions and Crops, see [“Working with Extensions and Crops” on page 80](#).

The Tools Menu

Use the **Tools** menu for administrative tasks such as setting users and groups, administering data sources, administering chemicals (for Plant Protection extensions), and so on. The menu options you see depend on your role, but following is a sample of the options:

- User options
- Server settings
- Database
- User management
- Data acquisition
- Get data from
- Chemicals database administration (only if at least one Plant Protection extension is installed)
- Node template library
- Climate management

Selecting User Options

To change options in your addVANTAGE Pro user profile, select **Tools ▶ User options** in the Explorer window. The dialog shown in [Figure 39](#) appears.

Figure 39. User Options Dialog, My Settings Tab

The dialog box has a tabbed interface with 'My Settings' selected. It contains the following fields:

- Language: English (dropdown)
- User: diml
- Full Name: (text input)
- Description: (text input)
- Phone number: (text input)
- E-Mail address: (text input)

Buttons at the bottom: OK, Cancel, Apply.

My Settings Tab

Use the **My Settings** tab to view or change various settings:

- Select the **Language** dropdown to choose the language used by addVANTAGE Pro during your sessions.
- Enter or update your **Full Name**, **Description**, **Phone number**, or **E-Mail address**.

Panels Tab

Use the **Panels** tab ([Figure 40](#)) to view or change default options for trends, events, and all panels. You can change all of these options separately when you work with panels, as described in ["Creating Panels" on page 60](#).

Figure 40. User Options Dialog, Panels Tab

The dialog box has a tabbed interface with 'Panels' selected. It contains the following sections and options:

- Options for all panels:**
 - ☐ Automatically save panels on close
 - ☒ Show seconds in panels
 - ☐ Re-open last opened panels when log in
- Trends options:**
 - Default type for trend when creating a new trend with View Data menu: Graphic view (dropdown)
 - ☐ Default background color for graphic
 - ☐ Default background color for axis
 - ☐ Default background color for legend
 - ☐ Font color of legend
 - ☐ Default color of time axis
- Events options:**
 - Default field delimiter for CSV export: Semicolon (;) (dropdown)
 - When using "Show events" explorer sub menu, create an event with following options:
 - ☒ Show alarms
 - ☐ Show events

Buttons at the bottom: OK, Cancel, Apply.

Options for All Panels

- Automatically save panels by selecting the **Automatically save panels on close** checkbox. If you activate this option and close a panel you made

changes to, you are not asked if you want to save the panel—the panel will be saved by default.

- Select whether to see seconds when displaying time in a panel by clicking **Show seconds in panels**.
- If you prefer to always open addVANTAGE Pro with the panels you previously used open, select **Re-open last opened panels when log in**.

Options for Trends

These options serve three purposes:

1. At the top of the section, select the default view to use for a trend you create when you select **View Data** from the context menu: graphic, table, or instrument.
2. From the boxes that follow, define color defaults for the all views of new trends. You cannot use this dialog to change the colors in open or existing trend panels.
3. Use the last dropdown in this section to select the character to be used as the **Default field delimiter for CSV export**. When you export a trend into a CSV file, this option shows the character used to separate columns in the file.

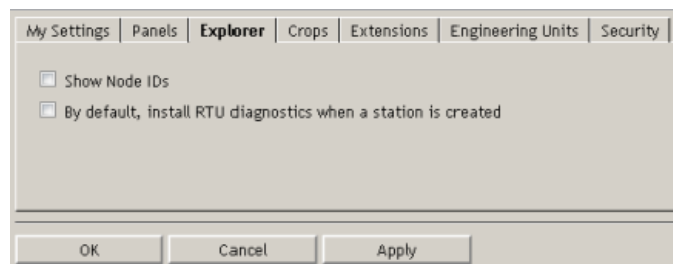
Options for Events

Use these checkboxes to determine whether a new Events Viewer should **Show alarms**, **Show events**, or show both.

Explorer Tab

Use the **Explorer** tab (Figure 41) to display the internal ID of each object in the Explorer. You probably won't need to activate **Show Node IDs** under normal use, but it can be valuable when you are debugging the system or you need technical support. You can also use this tab to **install RTU diagnostics** when you add RTU stations in Explorer.

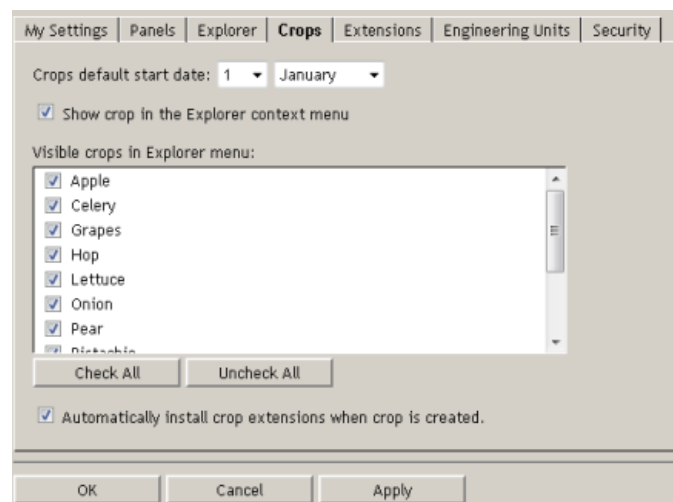
Figure 41. User Options Dialog, Explorer Tab



Crops Tab

Use the **Crops** tab (Figure 42) to view or change the **Crop default start date**, that is, the date to start collecting data about the crops.

Figure 42. User Options Dialog, Crops Tab



This dialog shows which crops will be visible to the user in the Explorer context menu. If a crop is not selected in this list, the user cannot add it to a node.

You also see an **Automatically install crop extensions when the crop is created** checkbox. The addVANTAGE Pro software can automatically include disease models and calculation extensions (collectively called crop extensions) usually associated with the crop. If you select this checkbox, those defaults are automatically added with the crop when it is added to a node. If this checkbox is not selected, only the crop itself is added to the node. The user can select the crop extensions separately—but only the extensions that are associated with the crop.

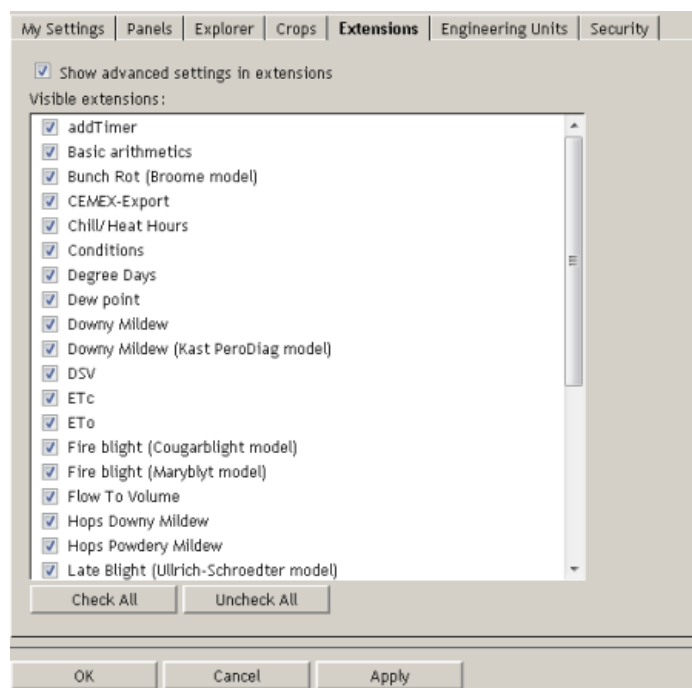
If a specific crop extension has been made invisible on the **Extensions** tab (as described next), the extension will not appear in any list of disease models or calculation extensions that can be added to the crop.

Your ability to edit this dialog depends on your role.

Extensions Tab

Use the **Extensions** tab ([Figure 43](#)) to select whether to **Show advanced settings in extensions**. If selected, the **Advanced settings** tab displays in an extension's Properties dialog.

Figure 43. User Options Dialog, Extensions Tab



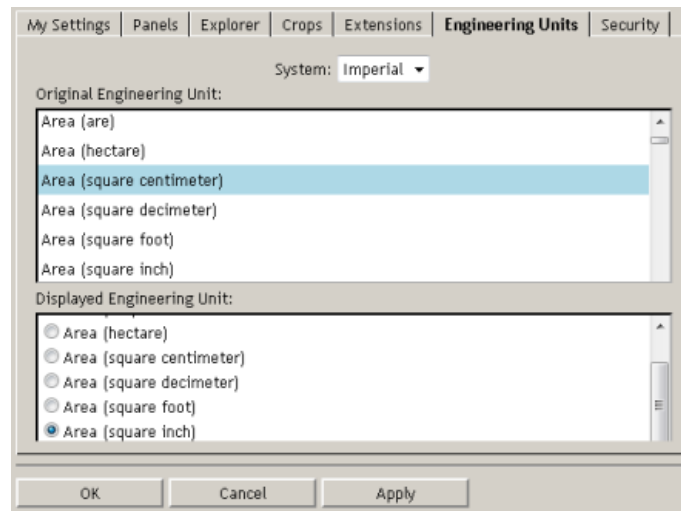
You can also make the various calculation extensions and disease models visible on the context menu.

Your ability to edit this dialog depends on your role.

Engineering Units Tab

Use the **Engineering Units** tab ([Figure 44](#)) to change the engineering units used to express the tags.

Figure 44. User Options Dialog, Engineering Units Tab



Use the **System** dropdown to choose how engineering units will be displayed to you. **Metric** and **Imperial** provide a set of default units that are either metric or American. For example, [Figure 44](#) shows that the original engineering unit for **Area (square centimeter)** in the **Metric** system will be displayed as **Area (square centimeter)**. If you select the Imperial system, the displayed unit changes to **Area (square inch)**.

You can also make specific selections for one or more of the original engineering units. To use a different displayed unit, select the **Custom**, system and click the radio button indicating the unit you want to be displayed, such as **Area (square foot)**.

To change the engineering unit for a specific tag in addVANTAGE Pro, do the following:

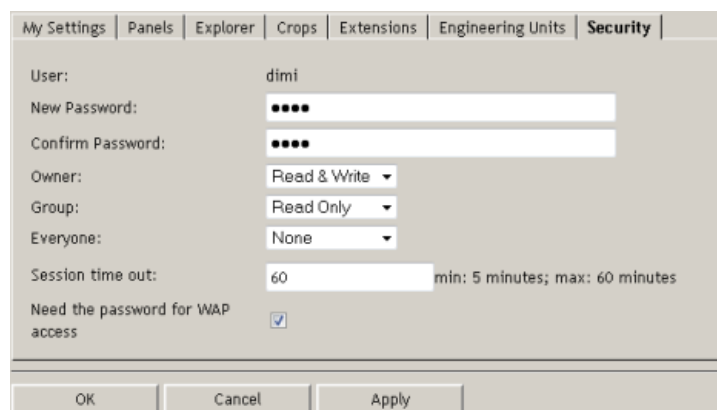
1. Find the engineering unit you want to change in the upper pane of the dialog and select it.
2. Valid alternatives are displayed in the lower pane. Select the one you want.
3. Click **Apply**.
4. To change other engineering units, repeat steps 1 through 3.
5. When you are finished, click **OK** to close the dialog.

Your ability to edit this dialog depends on your role.

Security Tab

Use the **Security** tab ([Figure 45](#)) to view or change security settings associated with your user profile.

Figure 45. User Options Dialog, Security Tab



You can change your password and account privileges, as well as the duration of your session timeout and whether you must use your password for WAP access to addVANTAGE Pro.

Some users will see only the User's name and the password fields. Your ability to edit this dialog depends on your role.

Using Server Settings

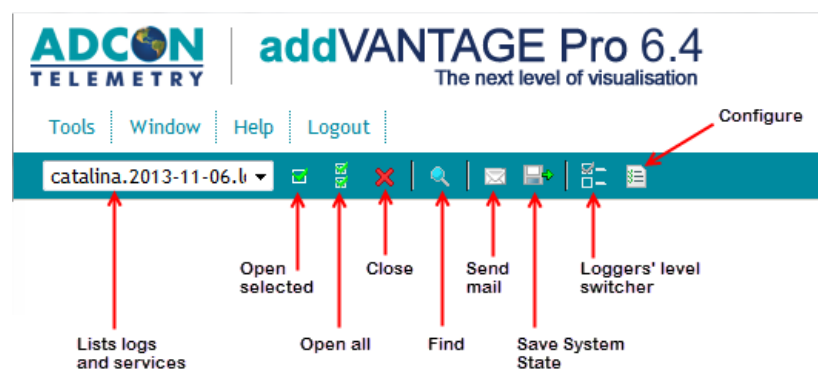
You can get server information by selecting **Help ► About**. The Info tab shows how many RTUs can be attached, your license expiration date, and other data about the server. You can also maximize the database space by clicking **Clean up** next to **Free memory**.

If you have administrator rights, you can select **Tools ► Server Settings** to access the features discussed in the following sections. The information offered by these tools can be valuable when you need technical support or you perform administrative tasks.

Log Monitor

This tool opens a window that shows errors and warnings for selected services or logs (see [Figure 46](#)).

Figure 46. Log Monitor Window



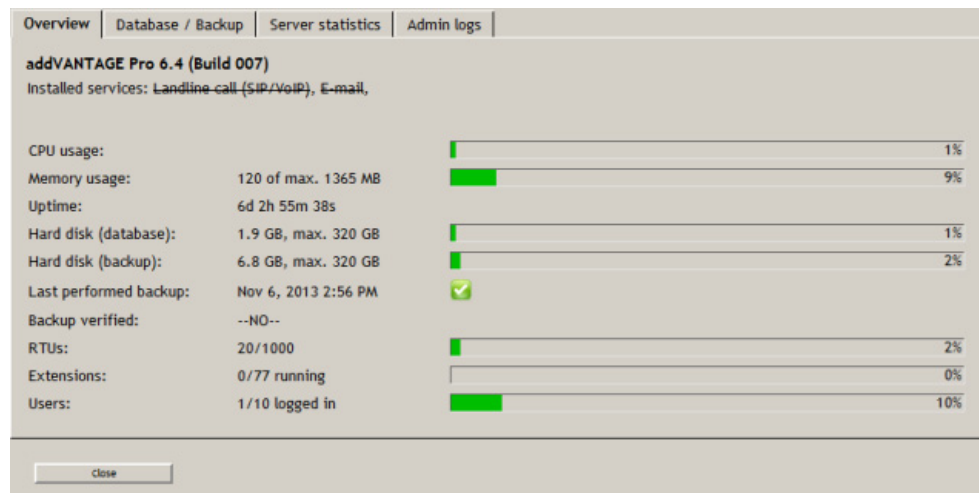
To view an error log, do the following:

1. Select **Tools ► Server Settings ► Log monitor** to display the dialog shown in [Figure 46](#).
2. Use the icons on the window to view logs.
 - Click the dropdown to choose a log to view.
 - Click **Open selected** to view the errors and warnings for the selected log.
 - Click **Open all** to view the errors and warnings for all logs.
 - Click **Close** to close the log you are viewing.
 - Click **Send mail** to send an e-mail containing the log. In the dialog that opens, you enter the recipient and subject, then choose how to send the log and add any comments.
 - Click **Save system state** to create and download an archive file containing all of the log files and various server settings.
 - Click **Loggers' level switcher** to set the error threshold for each addVANTAGE component. For example, if the source code states that DEBUG messages are to be written to a log file, but a component has a level switch that allows only FATAL messages to be written to the log file, DEBUG messages received for that component are not written to the log file.
 - Click **Configure** to set up how the logs display in the window.

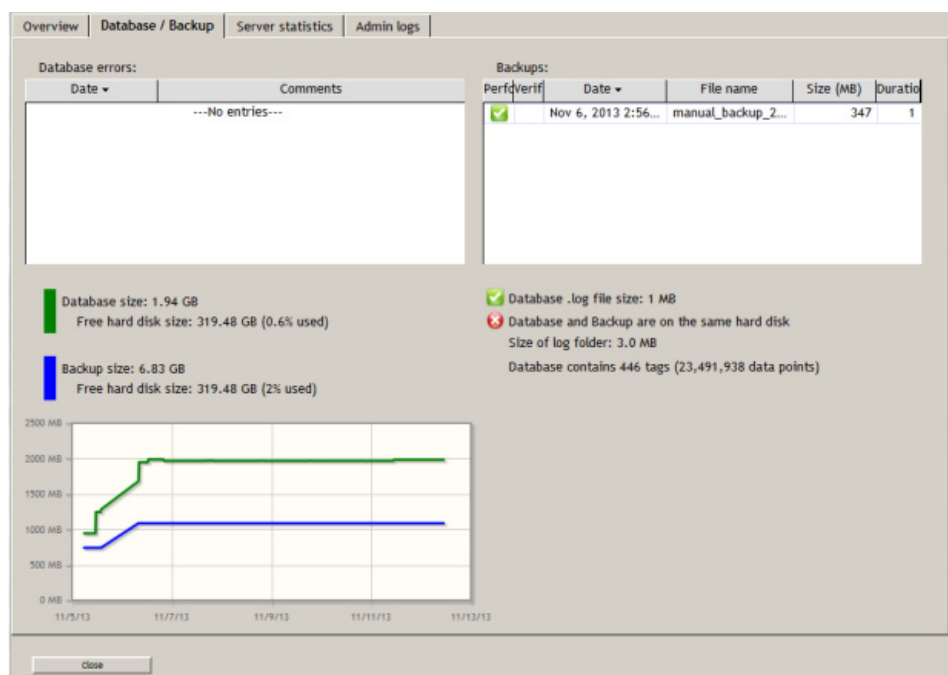
Server Diagnostics

Server diagnostics provide information about your server.

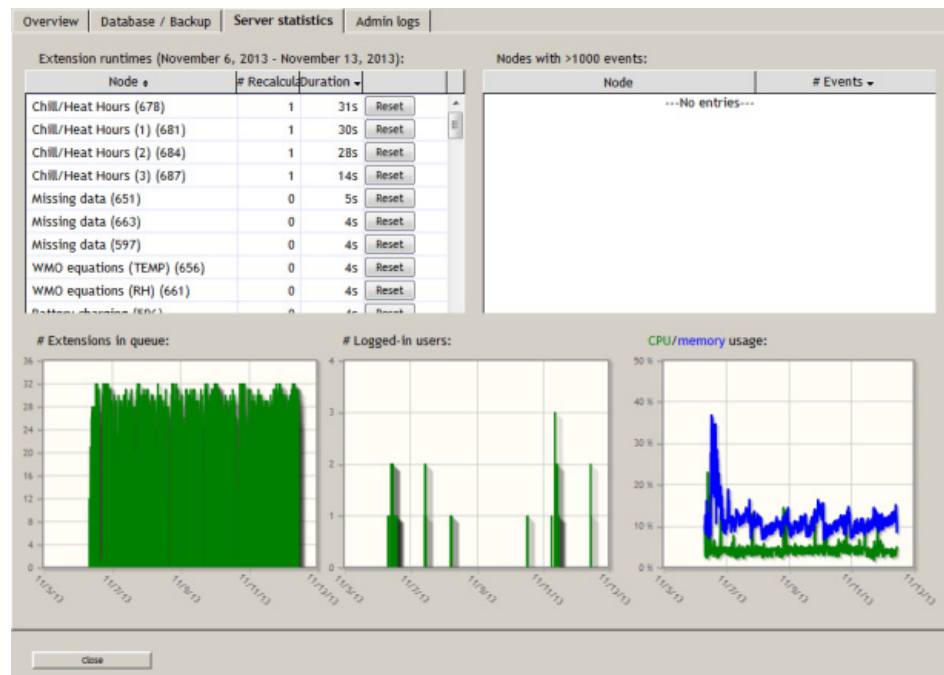
- To view usage information about your server, select **Tools ▶ Server Settings ▶ Server diagnostics**. The dialog shown in [Figure 47](#) is displayed.

Figure 47. Server Diagnostics, Overview Tab

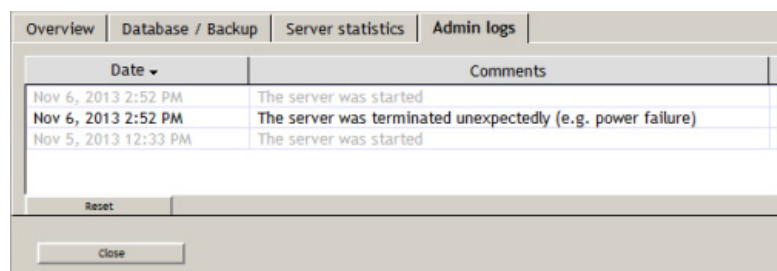
- To view database and backup information, click the **Database/Backup** tab. The dialog shown in [Figure 48](#) is displayed.

Figure 48. Server Diagnostics, Database/Backup Tab

- To view all of the statistics associated with the server, click the **Server statistics** tab. The dialog shown in [Figure 49](#) is displayed.

Figure 49. Server Diagnostics, Server Statistics Tab

- To view recent error and informational messages, click the **Admin logs** tab. The dialog shown in [Figure 50](#) is displayed.

Figure 50. Server Diagnostics, Admin Logs Tab

You can click the **Reset** button to clear the list of logs.

Extensions Info

This tool displays a dialog containing version and vendor information about each extension that is installed.

E-mail Settings

The E-mail service is responsible for sending e-mails issued by various parts of the addVANTAGE Pro software, such as extensions or supervision modules, or by the addVANTAGE Pro users themselves in case of technical problems (for example, sending log files).

Several parameters must be configured before the e-mail service can be properly operated. To configure the addVANTAGE Pro software's e-mail service, do the following:

- Select **Tools > Server Settings > E-mail Settings** to display the dialog shown in [Figure 51](#).
- Complete the **From** field as appropriate.

Note: Even though the addVANTAGE Pro software is sending the e-mails, the address must be valid. The **From** field can point to an e-mail alias or be a real person's e-mail address.

Figure 51. E-mail Service Configuration

3. Configure the SMTP server by entering its name into the **Server name** field. If your SMTP server requires authentication:
 - a. Select the **Use authentication** checkbox.
 - b. Complete the **User name** and **Password** fields appropriately (if in doubt, ask your network administrator).
4. You can optionally configure a port to be used for the outgoing mail server. To do so, add `:portnumber` to the end of the server name, where *portnumber* is the designated number of the port you want to use. Using the above example, a **Server name** of `smtp.yourdomain.com:26` would indicate port 26 on the server. If you don't add a port, the default used for outgoing e-mails is 25.


SIP/VoIP Settings

Session Initiation Protocol (SIP) is a protocol that helps to connect VoIP (Voice over IP) participants. Adcon chose this protocol because providers are available that offer a connection between a VoIP participant and a normal telephone (POTS). Using this technology, you can make several calls concurrently without having an outgoing phone line and just by using your Internet connection. You must have an account with the SIP provider before you can connect. This is quite similar to having an email account: You search for a provider and create an account there, then you get your login data and the server address you need to connect to. You even get a SIP phone number, which is unnecessary in the context of addVANTAGE Pro.

To configure the addVANTAGE Pro software's SIP/VoIP settings, do the following:

1. Select **Tools ▶ Server Settings ▶ SIP/VoIP Settings** to display the dialog shown in [Figure 52](#).

Figure 52. SIP/VoIP Settings

2. Enter the **Host name**, **User name**, and **Password** associated with your SIP account.
3. Click the blue triangle () to display the **Advanced settings** shown above and make any needed changes to the fields. (optional)
4. Enter the number used for SIP/VoIP calling and click **Test!** to make sure the number is valid.
5. Click OK to close the dialog.

When making telephone calls as an Action, addVANTAGE Pro plays a .wav file as instructed by the user. The .wav files are in the webapps\ROOT\WEB-INF\media directory, named as shown in the dropdown, filtered by the language code. For example, the files named en_Warning.wav and de_Warnung.wav display as **Warning** when using addVANTAGE Pro in English and as **Warnung** when using addVANTAGE Pro in German.

Administering Your Database

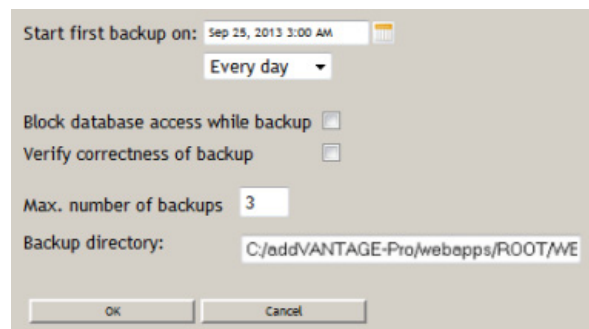
With addVANTAGE Pro 6.4, you work with just one database. You'll use the Tools menu to manage your database by changing backup settings, performing backups, or creating database statistics, among other functions.

Changing Backup Settings

addVANTAGE Pro initially sets an automatic backup for every day. Follow these steps to change the date this backup should start or how frequently the backup should occur:

1. Select **Tools ► Database ► Change Backup Settings** to display the dialog shown in [Figure 53](#).

Figure 53. Changing Backup Settings



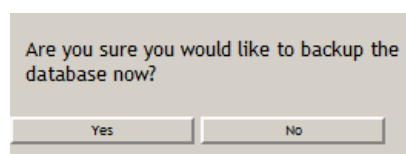
2. Select the date and time to **Start first backup on**, then select the frequency.
3. Select the **Block database access while backup** checkbox to prevent users from saving to the database while it's being backed up.
4. Select **Verify correctness of backup** to have addVANTAGE Pro check each line of the file and confirm that the backup completed successfully.
5. Use the **Max. number of backups** field to indicate how many backup files can be saved at one time. After this number has been reached, the backup files will be overwritten.

If you are logged in on a local server, the last field displays the location of the **Backup directory** that the system creates for you. You can update the database directory only when you are logged in using the same computer that addVANTAGE Pro is running on (the "localhost").

Backing Up Immediately

You might find times when an event occurs that you need to save outside your regular backup settings. You can select **Tools ► Database ► Perform Backup Now** to display the dialog shown in [Figure 54](#).

Figure 54. Performing a Backup Now



If needed, select the **Clean up database before performing the backup** checkbox to compress the data before backing up the database. Click **Yes** when you're ready to back up your data immediately, effectively saving a copy of your database in the backup directory.

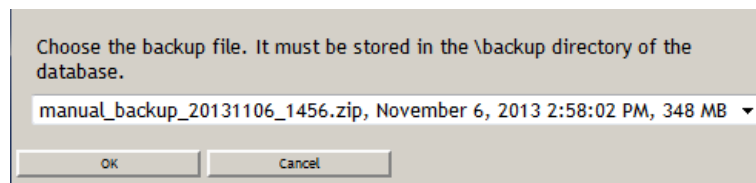
You'll see a message notifying you when the backup is complete.

Importing a Backed Up Database

You'll use this option mainly when you've backed up your database before setting up the software on a new PC, and now you need to import that backup. You can also use the option if you've experienced a system crash and need to restore your system.

Select **Tools ▶ Database ▶ Import Backup** to display the dialog shown in [Figure 55](#), then select the backup you want to import. Note that you cannot browse to the database—it must be stored in the backup directory.

Figure 55. Importing a Backup



User Management

The Users and Groups feature you can access here is discussed in detail in ["Administering Users, Groups, and Roles" on page 27](#). You can also access the following features:

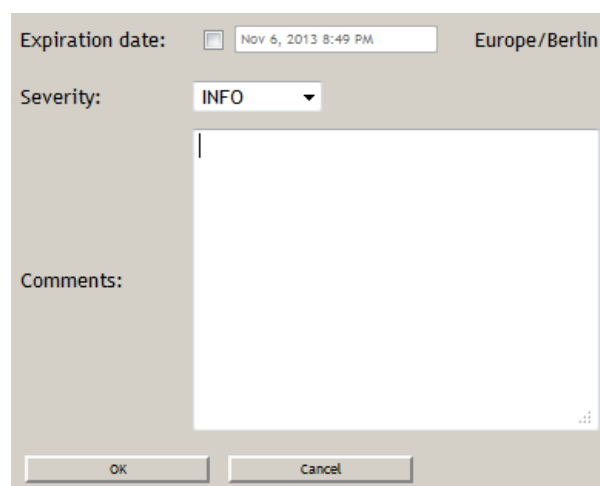
- **User Monitor** displays the number of users connected to the server at any given time.
- **Login Report** displays a running list of who has logged into addVANTAGE Pro 6.4.
- **Message to Users** displays the dialog shown in [Figure 56](#). Use this dialog to send an immediate informational, error, or warning message to users.

Sending Messages to Users

Follow these steps to send messages to users:

1. Select **Tools ▶ User Management ▶ Message to users** to display the dialog shown in [Figure 56](#).

Figure 56. User Message Dialog



2. To display the message for a specific period of time, select **Expiration date** and enter the date and time to stop displaying the message.
3. Select the **Severity** level of the message.
4. In the **Comments** box, enter the text of the message.
5. Click **OK** to close the dialog.

addVANTAGE Pro checks for messages every two seconds.

The Data Acquisition Service

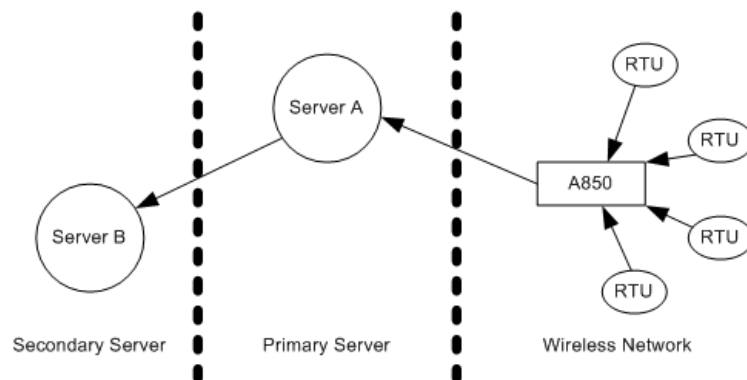
The Data Acquisition service is responsible for the replication of the raw data from the RTUs and/or other addUPI servers into your system.

Figure 57 illustrates a general addVANTAGE Pro 6.4 installation from the data acquisition perspective.

The wireless network shown in *Figure 57* has a Telemetry Gateway that acts as the network master. The gateway has an internal storage unit that keeps the incoming data from the RTUs for a certain amount of time. Server A (also called primary because it connects directly to the data source) periodically connects to the gateway via TCP/IP and retrieves the data. This function on the server is controlled by the Data Acquisition Service.

In this scenario, the Telemetry Gateway is a data provider (in fact, it is a server from this point of view) and server A is a data consumer (a client from this point of view). It is important to understand that the terms *client* and *server* have different meanings depending on the context. From the Data Acquisition Service perspective, the meanings are different from what we defined in this book as client and server. To avoid further confusion, we didn't show an addVANTAGE client (the browser) in *Figure 57*. In fact, in this context, the addVANTAGE client is irrelevant.

Figure 57. Raw Data Flow in an addVANTAGE Pro Installation



A data consumer can also be a data provider, as shown by the connection between server A and server B. When server A acts as the server and server B is the client, the data from server A will be replicated to server B.

Note: Only tag data can be transferred between servers and gateways at this level (not events).

Configuring the Data Acquisition Service

Before you begin, you must know the IP address or the name of a remote server you want to connect to. As already stated in this manual, it can be either a Telemetry Gateway, another addVANTAGE Pro server, or in general an addUPI server. You will also need an account and a password on the data source.

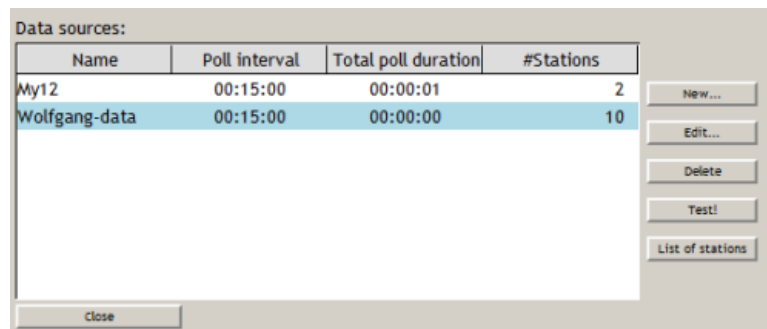
Note: *addUPI* is an *http*-based protocol used to transfer raw data between Adcon telemetry components. You can get the protocol specification from Adcon Telemetry free of charge.

Complete the following steps to add a data source to the Data Acquisition Service:

1. Select **Tools ▶ Data Acquisition** to display the Data Acquisition dialog (*Figure 58*) showing a list of data sources.

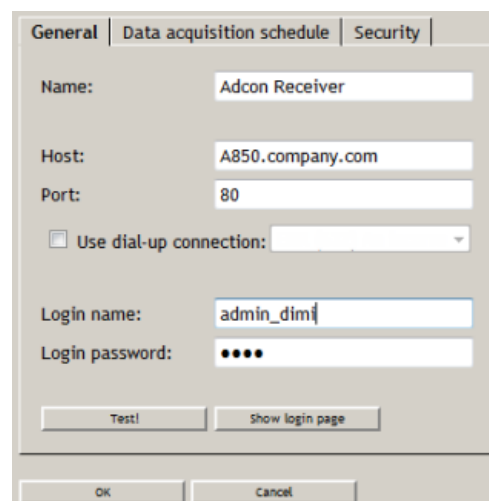
You can verify the functionality of any data source by selecting it in the list and clicking **Test!**

Figure 58. Data Sources Dialog



- The **Poll interval** shows how often the data source acquires new data.
 - The **Total poll duration** is how long it takes to get that new data. If the total poll duration is longer than the poll interval (for example, it takes 11 minutes to get data, but the poll interval is 10 minutes), the **Total poll duration** is displayed in **red**.
 - The **#Stations** shows how many RTUs use the data source. To see a list of RTUs assigned to the data source, click **List of stations**.
2. Click **New** to display the **General** tab of the dialog you use to set up a new data source (see [Figure 59](#)).

Figure 59. New Data Source Dialog, General Tab



3. Complete this dialog as follows:
- In the **Name** field, type the name of the remote server you want to connect to. Use a name that will help you recognize the server, not necessarily the Internet-qualified name.
 - In the **Host** field, type the qualified Internet name or IP address of the server.
 - In the **Port** field, type the port configuration (the default for a Telemetry Gateway is 80, but an addVANTAGE Pro 6.4 server's default port is 8080).
 - Optionally, select the **Use dial-up connection** checkbox to use external scripts if you want to allow for retrieving data from gateways or servers accessible over dial-up connections.
 - In the **Login name** field, type the name you use to log in to the server.
 - In the **Login password** field, type the password that goes with your login name. For an A840 Telemetry Gateway, the default login account is adv and the password is advantage.
 - Test the data source by clicking **Test!** in the Data sources dialog. (optional)
 - Log in to the new data source in a separate browser window by clicking **Show login page**. Although you can click this button now, you might want to wait until you've completed the other tabs. This button is

helpful if you need to log in to fix an error you made while creating the data source. (optional)

4. Select the **Data acquisition schedule** tab to display the dialog shown in [Figure 60](#).

Figure 60. New Data Source Dialog, Data Acquisition Schedule Tab

5. Complete this dialog as follows:
 - a. Set the schedule of data download according to your needs.
The day and hour buttons are toggles that are “pressed” by default. In other words, the default schedule is to get data every hour of every day of the week.
If you plan to use manual download, unselect the **Use schedule** checkbox.
 - b. Use the **Every** and **Start at minute** dropdowns according to the schedule you want. By clicking the buttons and selecting the poll interval in minutes, you can set up virtually any kind of schedule. The “every five minutes” set in the figure means that data is collected every five minutes at the start of the hour, so, virtually all the time.
 - c. To set an alarm for delayed data, select the **Max. data delay** checkbox, then set the maximum number of hours data can be delayed before sending an alarm. The software regularly checks the devices, so if you set a delay of 3 and data does not exist to be acquired for more than three hours, an alarm will be sent.
6. Click the **Security** tab to display the dialog shown in [Figure 61](#).

Figure 61. New Data Source Dialog, Security Tab

7. Use this tab to set the data source’s ownership and privileges users have in regard to the data source, similar to the privileges granted for nodes. See [“Node Security Properties” on page 35](#) for instructions about the Security tab.
8. Click **OK**.

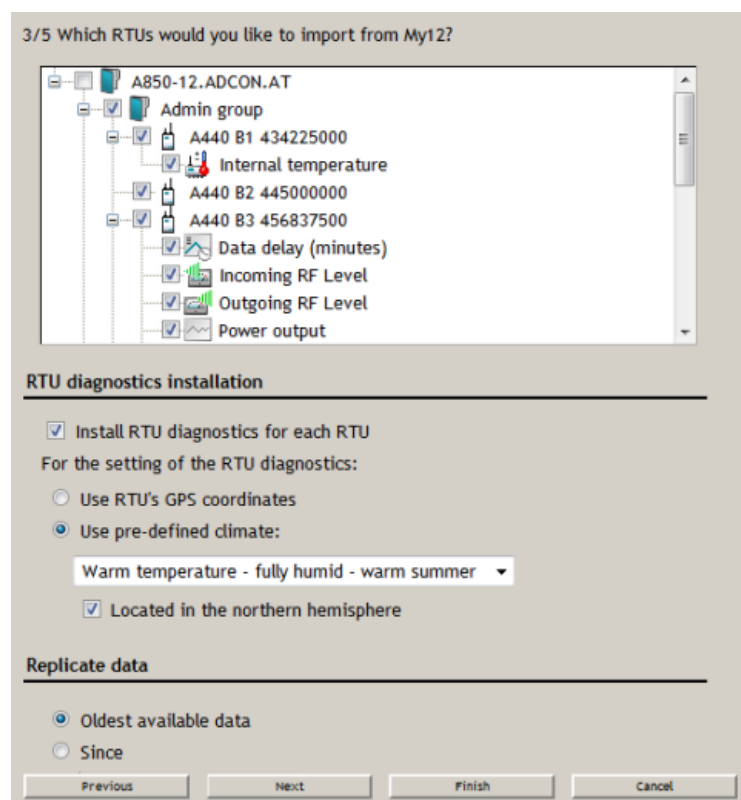
Retrieving Data from a Server

After you configure an entry for a remote server, you can start retrieving data. The easiest way to do this is to create a new area in the Explorer and add some RTUs/tags from the remote server to that area. You can also retrieve data to an RTU created after an import operation.

Our example supposes that you are starting from scratch. In other words, no data was imported from a previous addVANTAGE version. The first thing you must do is create an area where you will add RTUs. Do this by right-clicking the root area in an Explorer and selecting **Create New Node ▶ Area**. Then, follow these steps to add an RTU on the area:

1. Right-click the area and select **Create New Node ▶ RTUs/Tags From ▶ hostname** (the *hostname* is the source gateway or server). After a short delay, a dialog listing the RTUs on the remote server (or gateway) will be displayed.
2. Expand the tree (see [Figure 62](#)) and select the RTUs and tags that you want to retrieve on your system.

Figure 62. Data Acquisition Selection Dialog



3. In the RTU diagnostics installation pane:
 - a. To be sure each RTU has its own diagnostics installed, select the **Install RTU diagnostics for each RTU** checkbox.
 - b. To choose how the RTU diagnostics are determined, select either **Use RTU's GPS coordinates** or **Use pre-defined climate**. If you select a pre-determined climate, you must select the climate and indicate whether the climate is **Located in the northern hemisphere**.

If you choose not to **Install RTU diagnostics for each RTU**, the choices for diagnostics settings are unavailable.

4. To retrieve data starting from a specific date and time, set the **Replicate data** options accordingly.
5. Click **Finish** when you are done.
A dialog showing the diagnostics is displayed. Click **Close** to close this dialog.

After a short delay, you will notice that the new RTUs/tags are created under the selected area. Depending on how the data acquisition schedule is set, data will be retrieved.

Disabling the Data Transfer from a Server

Follow these steps to disable the transfer of data from a specific server:

1. Select **Tools ▶ Data Acquisition**.
2. Select the host and click **Edit** to display the Properties dialog for the selected host. (An example of such a dialog is shown in [Figure 59](#).)
3. Select the Data acquisition schedule tab ([Figure 60](#)), then unselect the **Use schedule** checkbox.
4. Click **OK** to close the dialog. Although disabled, you can still download data from that host manually by selecting **Tools ▶ Get Data From ▶ hostname**.

Reconnecting Tags

You might occasionally need to reconnect tags from one source to another, for example, from a Telemetry Gateway to an addVANTAGE Pro server. Another situation where you might need this feature is after exporting data from addVANTAGE 3.46 when you want to continue to download data and append it to the imported data.

You can reconnect RTUs when all the tags of that RTU will be reconnected to the appropriate sensors. To reconnect an RTU:

1. Select the RTU, then right-click it.
2. Select **Connect To ▶ hostname**.
3. A context menu appears, listing all the devices on that host (you may need to expand the tree listing the RTUs).
4. Select the RTU you want to reconnect to and click **OK**.

You can also reconnect individual tags, if they belong to the same RTU (for example, you switched a sensor on the RTU from one connector to the other and did not update this change properly with the gateway's Configurator). To reconnect a tag, follow the steps above, except that you select and right-click the tag in step 1, then click **Connect**.

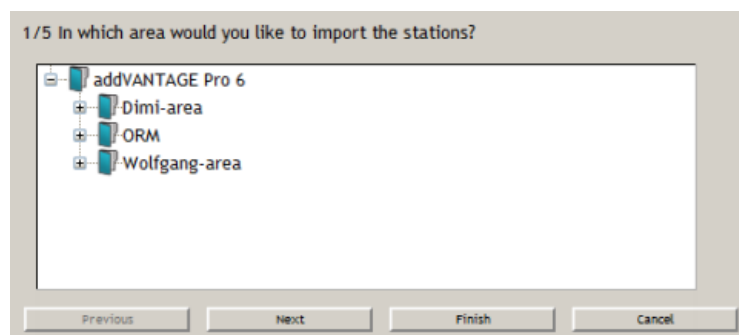
When a tag is acquiring data, the icon for the tag and for the RTU will display in the Explorer with a tiny moving arrow.

Using the RTU Creation Wizard

Adcon has a quick way to add an RTU and be sure you have configured it properly. Follow these steps to use the RTU creation wizard:

1. In the Explorer's toolbar, click the **RTU creation wizard** icon. The dialog shown in [Figure 63](#) appears.

Figure 63. RTU Creation Wizard, Area Page



Notice the question at the top of the dialog. It shows you that you are on page 1 of 5 of the creation wizard.

2. Expand the nodes as needed, then select the area where you want to create the RTU.

Note: Steps 1 and 2 are skipped if you have already selected an area for the new RTU.

3. Click **Next** to display the dialog shown in [Figure 64](#).

Figure 64. RTU Creation Wizard, Date Source Page

Note: You can click the **Finish** button at any step in the RTU creation process and configure the remaining features manually.

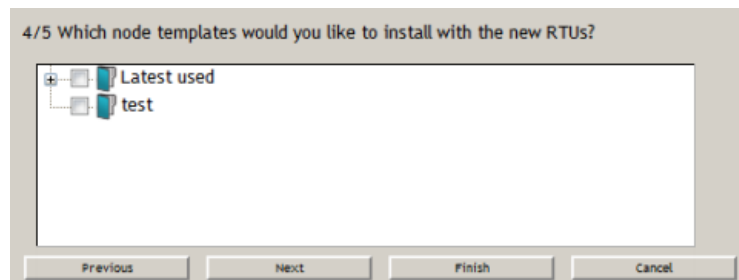
4. Select the appropriate data source from the dropdown, then click **Next** to display a dialog similar to the one shown in [Figure 65](#).

Figure 65. RTU Creation Wizard, RTU Selection Page

- a. Expand nodes as needed and select RTUs whose data you want to add.
- b. If needed, select to **Install RTU diagnostics for each RTU**.
- c. If you are installing RTU diagnostics for each RTU, select whether to **Use the RTU's GPS coordinates** or **Use pre-defined climates**.
- d. If you select pre-defined climates, select the climate from the dropdown and select whether the climate is **Located in the northern hemisphere**.
- e. Finally, select whether you want to include the **Oldest available data** or data from a specified date.

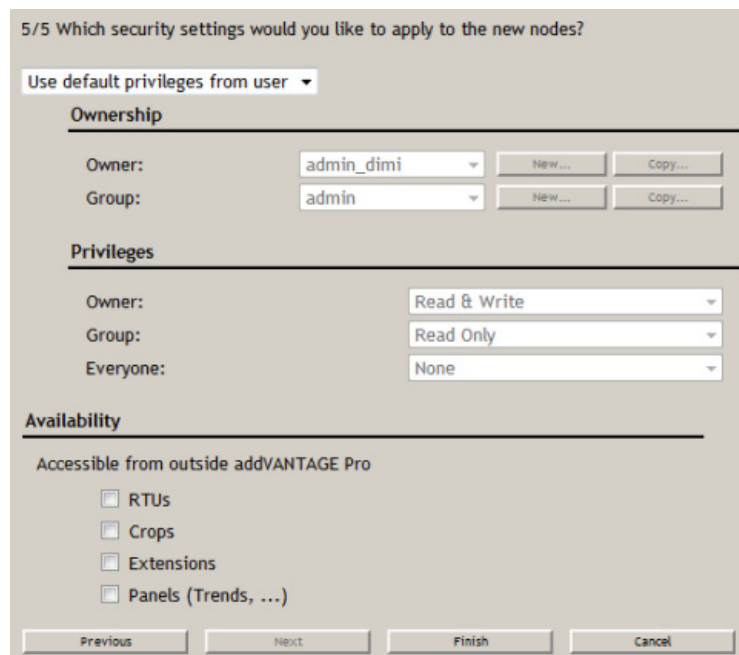
5. Click **Next** to display the dialog shown in [Figure 66](#).

Figure 66. RTU Creation Wizard, Node Template Selection Page



6. Expand the nodes as needed and select any templates you want to associate with this RTU, then click **Next** to display the dialog shown in [Figure 67](#).

Figure 67. RTU Creation Wizard, Security Settings Page



7. This dialog has the same options as an RTU properties dialog, except that you can select the kinds of nodes you want to be accessible from outside addVANTAGE Pro.
8. Click **Finish** to complete the wizard and display a dialog showing the RTU you just created.
9. Click **Close** to close that dialog and view the new RTU in your Explorer.

Getting Data from the Server

You can force data retrieval manually by selecting **Tools ▶ Get Data From ▶ hostname**.

Using the Chemicals Service

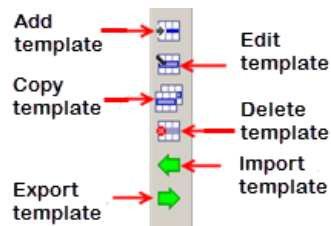
Adcon does not supply lists of chemicals because the rules for their use differ between locations. For more details about this service, please consult the *addVANTAGE Pro 6.1 Extensions and Crops* manual.

Using the Node Template Library

With addVANTAGE Pro, you can save some nodes as templates to use again and again. For example, you might like to use the same tags to create a Trend for different RTUs. You can create the Trend once, save it, save it as a template, then save the template to the node template library. Later, you can create similar Trends by selecting the one you created from the node template library.

Following are the icons you will work with when you create and use the node template library:

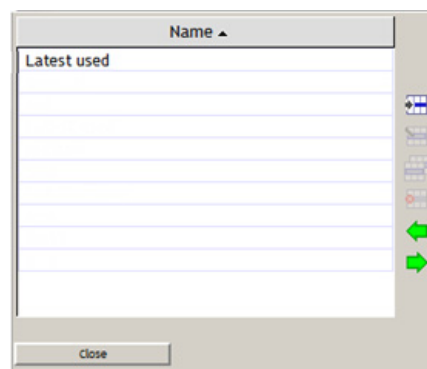
Figure 68. Node Template Library Icons



If you plan to save many different types of templates, for example, for different types of panels or disease models, you might want to organize the template library first. You can organize the template library by creating a folder for each type of template you'll be creating. Follow these steps to organize your node template library:

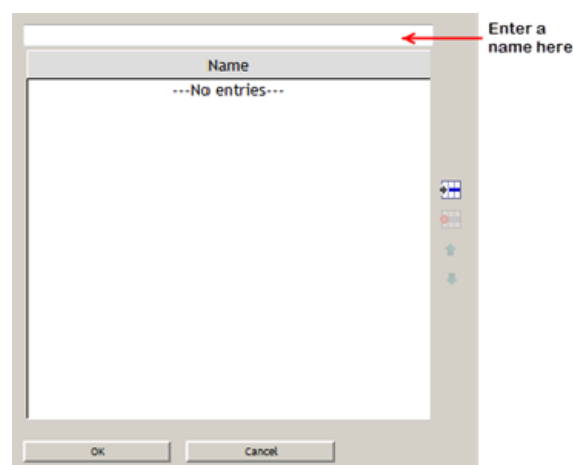
1. Select **Tools ▶ Node template library** to open a dialog similar to the one shown in [Figure 69](#). The default template is named **Latest used**, but your dialog might also show other templates.

Figure 69. Node Template Library



2. Click **Add** to open the dialog shown in [Figure 70](#), then enter a **Name** at the top of the dialog.

Figure 70. Naming a New Node Template



3. Click **OK**.
4. Repeat steps 2 and 3 for each folder (that is, template type) you want to have in the library. When your library is complete, click **Close** in the Node Template Library window.

You can select and **Edit** any template in the library, and even **Copy** a template if you want to save the original but make changes to it. As usual, you can also **Delete** a template if it's no longer needed. You can also use the **Import** button to add templates created by others to your library, and you can use the **Export** button to save your own templates externally, in case you want to share them with other locations.

You now have a library for templates. Nodes you can add to templates include all panels, crops, disease models and calculation extensions. If you create nodes from existing templates—by right-clicking an area, selecting **Create new node**, and choosing any of the “from template” options—the new node will be saved in the **Latest used** template. To be able to save new nodes in the other folders, create the node without using an existing template.

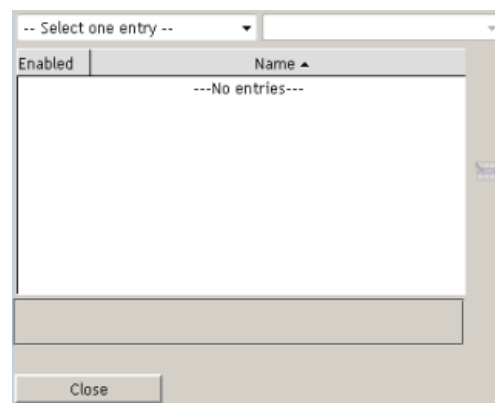
Using the Climate Manager

With the release of addVANTAGE Pro 6.2, Adcon introduced a new type of extension called RTU diagnostics, discussed in [“Adding RTU Diagnostics to a Tag” on page 81](#). All of these diagnostic extensions are related to climatic conditions, and you control aspects of the climates through the Climate Manager.

Follow these steps to use the Climate Manager:

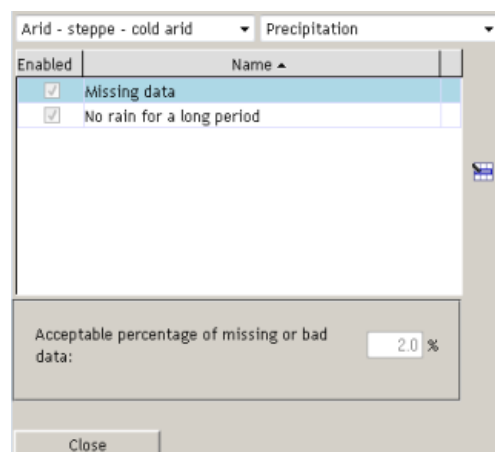
1. Select **Tools ▶ Climate manger** to display the dialog shown in [Figure 71](#).

Figure 71. New Climate Manager Dialog



2. From the dropdown on the left side of the dialog, select a climate.
3. From the dropdown on the right side of the dialog, select a sensor.
[Figure 72](#) shows a diagnostic extension applicable to the Precipitation sensor in an arid climate.

Figure 72. Climate Manager Dialog for Arid Climate



When you click an extension in the list, its properties show below the list.

4. Select an extension and click the **Edit** button to display the dialog shown in [Figure 73](#).

Figure 73. Properties of Missing Data Extension of Precipitation Tag

Arid - steppe - cold arid
Precipitation
Missing data
☒ Create by default

Algorithm variables

Acceptable percentage of missing or bad data: 2.0 %

Event

Severity: Alarm

Show ID of the sensor in the events: ☒

OK Cancel

At the top of this dialog, you can see which climate, sensor, and diagnostic extension you're working in. The **Create by default** checkbox indicates whether the extension should be created automatically when you add an RTU that has a Precipitation sensor.

5. Change the settings for the **Algorithm variables** as needed.
6. Change the **Event** settings as needed:
 - a. **Severity** determine whether the event is shown as an **Event**, **Alarm**, or **Service log** entry in the Events viewer.
 - b. The **Show ID of the sensor in the events** checkbox determines whether the sensor ID is displayed in the Events viewer.
7. Click **OK** to save the changes to the diagnostic extension and recalculate all the extensions that have these climate settings.

Chapter 5. Creating Panels

Lists, Trend Viewers, and Event Viewers are panels that offer different ways to view data in addVANTAGE Pro 6.4.

You can right-click any panel and use the **Cut**, **Copy**, and **Paste** options to duplicate the panel in another part of the Explorer.

The List

Use the List to display a group of addVANTAGE Pro objects in a different way. The List is similar to an Explorer view, with the difference that the objects in a list are not expandable. Use a List when you need to work on a group of objects with similar properties, for example, configure extensions or synchronize tag settings.

You can create a List by clicking the **New Panel** icon and selecting **List**. Use the **Add Nodes** button on the List's toolbar (Figure 74) to add objects to the list. You can also remove objects that you no longer need by using the **Remove Nodes** button on the toolbar.

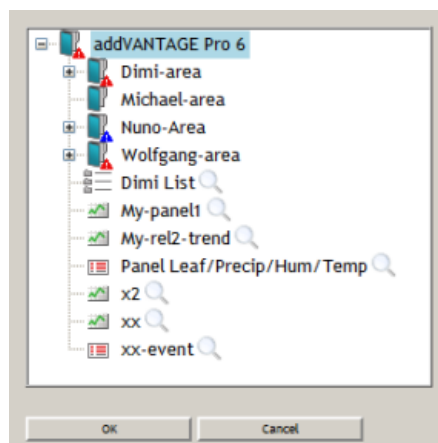
Figure 74. List Toolbar



Note: Removing an object from the list does not permanently delete it from the database. You will continue to see the object in an Explorer panel. To permanently remove an object, right-click it and select **Delete**.

When you add objects to a list from the List's toolbar, the Choose Nodes dialog opens, as show in Figure 75.

Figure 75. Choosing Objects to Add to a List



Select an object in the dialog and click **OK**. You can add only one object at a time.

If you're using Internet Explorer, you can also add objects to the List by dragging and dropping them from an Explorer into an open List. If you're using Firefox, you can drag and drop an object onto the saved List's icon in an Explorer.

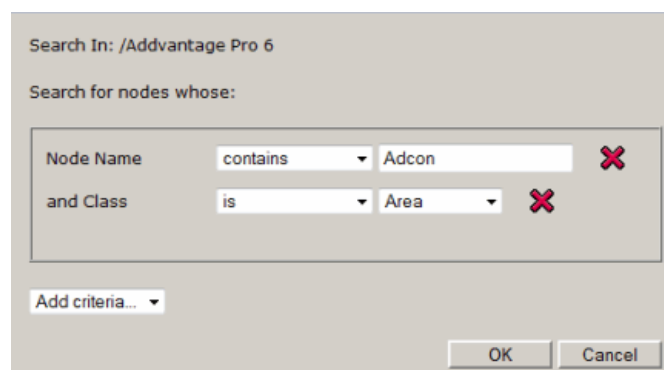
Search

You can also create a list as a result of a search operation. Suppose you want to search for all areas in the system having the string “Adcon” in their name.

Follow these steps to search for those areas and populate the List:

1. In an Explorer, click the Search icon (the magnifying glass icon on the right side of the text box in the Explorer toolbar) to open the advanced search dialog ([Figure 76](#)).
2. **Node name** is displayed by default, with the default property of **contains**. Enter **Adcon** in the text field.
3. Click the **Add criteria** dropdown, then select **Class**. Another line of search parameters is displayed in the Search dialog. You can also search by **Name**, **Subclass**, **ID**, and **Attribute**. Each type of criteria has its own properties. Click the down arrow to see those properties.
4. Keep the default property of **is**, but from the next dropdown, select **area**.
5. Click the **OK** button.

Figure 76. The Search Dialog



A List appears ([Figure 77](#)), containing all the objects fulfilling the selected criteria. After performing the required operations on the nodes in the list, you can save the list as a panel or discard it by closing it.

Figure 77. A List Viewer

#	Name	Location
1	Adcon Events	/addVANTAGE Pro 6/Dimi/
2	Adcon Trends	/addVANTAGE Pro 6/Dimi/
3	Adcon Weather Test RTU	/addVANTAGE Pro 6/MH_test_AUSTRIA/
4	Adcon Weather Test RTU	/addVANTAGE Pro 6/condor/
5	APRO Hosting 01 Adcon Klosterneuburg	/addVANTAGE Pro 6/Dimi/

Quick Search

A quick search option is also available:

1. Click the magnifying glass icon on the left side of the text box in the Explorer toolbar.
2. Select the search criteria (**Name**, **Class**, **Subclass**, or **ID**). Add and remove the search criteria as needed.

Note: The search starts from the node you selected in the Explorer.

3. Type the string you are searching for and confirm it by pressing the Enter key.

A list with the criteria you entered is displayed.

Search from Here

You can also right-click a node in the Explorer and select **Search from here**. The Search dialog shown in [Figure 76](#) is displayed, but the **Search in** line shows the

node where you started the search. Complete the Search dialog as described previously.

Properties

A list is a collection of nodes you want to treat as one object. For this reason, you should view properties only on the items in the list.

The Trend Viewer

Use the Trend viewer to see a plot of tag values stored in the database. To open a Trend viewer, click **New Panel** and select **Trend**. The trend toolbar is shown in [Figure 78](#).

Figure 78. Trend Viewer's Toolbar



Prior to explaining the ways to display data in a Trend viewer, please make yourself familiar with the tool bar and its elements, which you will frequently use in your daily work with addVANTAGE Pro 6.4.

Button 1	Save	Saves the current panel. If this panel has not been saved before, clicking this button opens a dialog you use save it.
Button 2	Save As	Opens a dialog you use to save the current panel with different name. If the current panel has not been saved before, this button functions the same as the Save button.
Button 3	Add to node template library	Opens a dialog where you choose the destination for the template.
Button 4	Print	Prints the Trend on the default printer.
Button 5	Export all values in time range to PDF	Saves the values shown in Graphical or Table view as a PDF file.
Button 6	Export all values in time range to CSV	Saves the values shown in Graphical or Table view as a CSV file.
Button 7	Properties	Opens the Trend Options dialog, where you set the options for each object in the Trend, or add/remove objects from the Trend.
Button 8	Go to Begin	Sets the starting date of the trend to the beginning date of your database.
Button 9	Go 30/7/1 Days back	Moves the starting date of the trend 1, 7, or 30 days back.
Button 10	Go back X	Goes back the specified period of time, where X is the span shown in 13.
Calendar 11	Date Chooser	Shows the start date of the Trend viewer. Clicking the downwards arrow to the right of the Date Chooser opens a calendar you use to select a specific start date.
Button 12	Go forward X	Goes forward the specified period of time, where X is the span shown in 13.
Button 13	Go 1/7/30 Days forward	Moves the starting date of the trend 1, 7, or 30 days forwards.

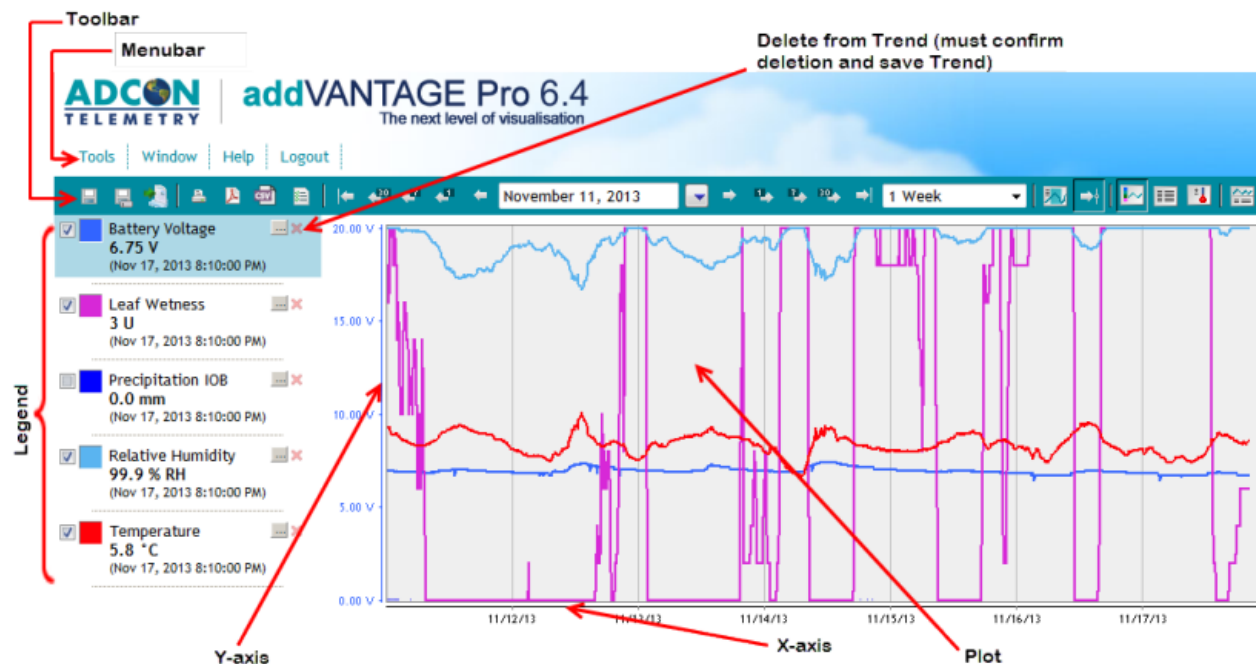
Button 14	Go to End	Sets the end date of your database at the end of the currently selected span. If you have, for example, selected to view a 7-day span, and you click Go to End , the trend viewer will show you the data of the last 7 days of your database.
List 15	Span Chooser	Displays the time span being used in the trend. Click the downwards arrow to the right of the Span Chooser to open a dropdown with predefined time spans to choose from. You'll also see a Custom duration. Select this to display the Trend Options dialog, where you'll select the Display tab and choose the duration you want.
Button 16	Show Values at Cursor	Displays the values of each tag in a little flag next to the cursor. This allows a faster understanding than looking at the legend. If you unselect this button, you can click and drag to see several statistical values for the selected area.
Button 17	Always jump to last available data	Sets the Trend view to always open showing the last available date. (Replaces having to open a Trend view and click Go to End .)
Button 18	Graphical view	Displays the Trend's values on a graph.
Button 19	Table view	Displays the Trend's values in a table. Table View also enables you to export data with a mouse-click.
Button 20	Virtual instruments	Displays the Trend's values as they might appear on an instrument panel.
Button 21	Link to another window	Opens a panel chooser to let you link the panel you are working with to another panel (see " Linked Panels " on page 78).

Viewing Trends with Drag-and-Drop

Expand the tree in an Explorer until you reach the desired tag, then drag and drop it into an open Trend viewer. After a short delay, the tag's plot is displayed in the Trend viewer. [Figure 79](#) shows a Trend viewer displaying data for several tags. Notice that each tag in the graph displays in the color designated for it in the Legend that is to the left of the graph. You'll also see that the Y axis color is

linked to the tag color, but you can change that in the trend's properties (see [page 66](#)).

Figure 79. A Trend Viewer



You can plot tags coming from different RTUs on one Trend viewer. If you have tags from different RTUs with the same name, you can easily identify them by placing the cursor in the legend for the respective tag. After a short delay a tool tip pops up, displaying the tag's full path.

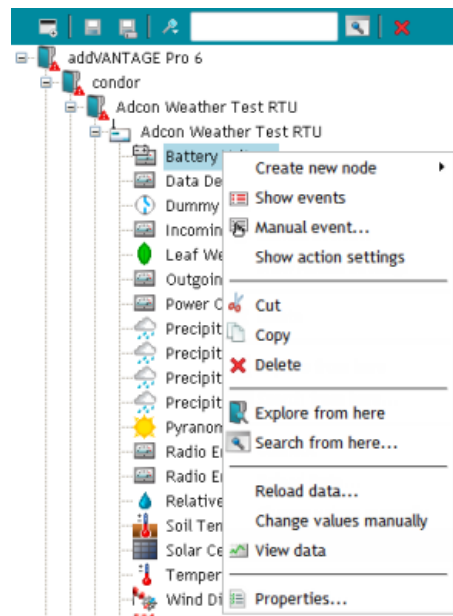
Note: *Currently the drag and drop method works only if you are using Microsoft Internet Explorer. In Firefox you can still drag and drop tags, but only onto a Trend viewer icon within the same Explorer.*

Viewing Trends from Explorer

addVANTAGE Pro 6.4 provides another way of creating a trend view, right from your Explorer. This is a great way to quickly create a trend panel for temporarily looking at data.

1. In the Explorer select the tags you want to see in your Trend (left-click the desired tags while holding down the Shift or the Ctrl key).

2. Right-click the selected tags and select **View Data** from the context menu as shown in [Figure 80](#).

Figure 80. View Data from Explorer

If you want to keep this Trend, you need to save it by clicking on the **Save** icon. Else if you close the panel you will be asked if you want to save it, unless you have selected **Tools > User options > Panels > Automatically save panels on close**. In this case the new panel will be discarded unless you save it manually.

Using Properties to Add Tags to Trends

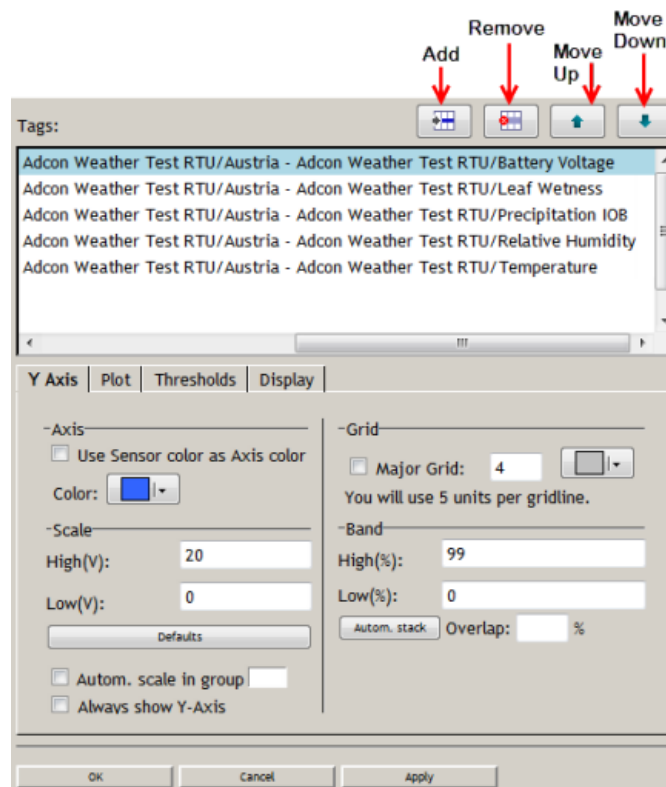
If you can't use drag and drop, follow these steps to display data in a Trend viewer:

1. In an active Trend viewer, click **Properties** to display the Trend Options dialog shown in [Figure 81](#).
2. Click **Add** to display the Tag Chooser dialog listing the available tags.
3. Expand the tree until you find the tags you need to display (you can select more than one tag by using the shift and control keys).
4. Click **OK** when you are finished. The selected tags are now displayed in the **Tags** list, in the order you chose them.

If you need to add other tags in the Trend viewer, including tags from different areas/RTUs, repeat Step 2 through Step 4. To delete a tag, select it and click the **Remove** button. By using the arrow buttons, you can change the order of the tags in the list. When the Trend Options dialog lists all the tags you want to

display, click the **OK** button. The Trend viewer displays the tags and their data in a graphic form.

Figure 81. Selecting, Adding, and Removing Tags



Note: If no plots are displayed, check the date and use the arrows and the calendar in the Trend viewer to move to a date and time where you have data.

You can also use the extensive features available in the Trend Options dialog to customize the way your graph looks by viewing and changing the options on the **Y-axis**, **Plots**, **Thresholds**, and **Display** tabs. As you make changes in this dialog, you can click **Apply** to see how the changes affect the Trend before you save the changes. If you're satisfied with the changes, click **OK** to save the Trend.

Y-axis Tab

Following is an explanation of the options on the **Y-axis** tab shown in [Figure 81](#).

- **Use sensor color as Axis color.** The Y-Axis and sensor colors are assigned by addVANTAGE Pro and are identical by default. If you leave this checkbox unselected, you can use the color chooser you see to change the y-axis color, but the corresponding color of the tag on the graph will not change. If you select this checkbox, the color of the y-axis will be the same as the sensor color (as displayed on the Plot tab).
- **Scale**
 - **High /Low:** The scale refers to the tag's value range—in other words, the maximum or minimum value that is expected. If the tag can deliver data only in the range of -60°C to +40°C, for example, you need not enter +1000°C for the **High** and -200°C for the **Low** because no one would see the trend curve.

Normally, only people who know that their value is within a certain range use the **Scale** fields. For example, say you have a special Temp sensor in a production process. Its range is always between 20°C and 25°C but it is very important to see small changes. For this sensor, you would choose settings of **Low**=20 and **High**=25.

- The **Defaults** button resets the **High/Low** settings to the tag's default.
- If you select the **Autoscale** checkbox, the minimum and maximum values of the sensor will be determined automatically within the current time range. The **Scale High** and **Low** fields are ignored in this case.
- Use **Automatic scale in group** to display the scale as an average of the highs and lows for the tags in a trend. You can display multiple groups of such

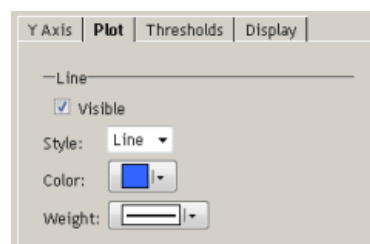
autoscaled sensors by assigning each to a group. For example, you could assign sensor values above a certain point to one group and values below that point to another group. Groups are entirely arbitrary and of your own making. Group numbers need not be consecutive.

- If you select the **Always show y-axis** checkbox, the y-axis for the current sensor (meaning the sensor whose y-axis properties you are viewing) will be shown on the grid always, even when another sensor is selected. Normally, when you select a sensor in the Legend section, the y-Axis is refreshed and the scale of the selected sensor is shown. However, if you select the **Always show y-axis** checkbox, you will see the current sensor's y-axis and the y-axis for the sensor you select in the Legend.
- Use the **Major Grid** to show horizontal lines. The number gives the number of lines spread over the value range of the sensor and the values between the lines. To know how many units will be displayed between two major grid lines, enter a number and press the Tab or Enter key. The line below shows You will use XX units per gridline, where xx is the number of units. The xx value depends on the **Scale** and the number of gridlines used. For example, if you turn on the major grid for a Temperature sensor, you might see You will use 6 units per gridline, meaning one gridline might show 20°C, while the line above it shows 26°C and the line below it shows 14°C.
- The **Band High (%) / Low (%)** is the percentage of available space for this y-axis and the trend curve. The default is 0 to 100% (meaning that the grid will use all available space). **Band** is helpful for Trends that contain many similar tags (e.g. Battery voltages=BV). You can say: Use the lower 50% for BV 1 and the upper 50% for BV 2. The axis and the trend curves would not overlap, but be drawn in different parts of the grid. The settings for BV 1 would be Low=0, High=50 and the lower half of the grid would display these voltages. BV 2 would have settings of Low=50, High=100 and the upper half of the grid would display its voltages.
You can also experiment with these fields in conjunction with the autoscale, autostack, and overlap features to create a variety of interesting trends.
- The autoscaling feature introduces the ability to show multiple graph lines that overlap for multiple sensors, causing graphs that can be difficult to read. Use the **Automatic stack** and the **Overlap** percentage features to display the graph in several different ways that eliminate any such difficulty. You can select all of the sensors in the Properties dialog and click the Automatic stack button to stack the values for each sensor on top of each other. In some instances, however, you might need to show some overlap. You can still select sensors to autostack but enter a percentage of overlap to show.

Plots Tab

Following is an explanation of the options on the **Plot** tab shown in [Figure 82](#).

Figure 82. Trend Properties, Plot Tab



- The **Visible** checkbox has the same function as the checkbox in the Legend. If the checkbox is selected, the sensor values appear in the grid. If the checkbox is not selected, the values do not appear.
- You can use a **Line** or **Bar Style** for the values in the grid. The **Bar** style is useful for sum values, such as precipitation or data flow.
- Use the **Color** chooser to change the color of the **Line** or **Bar**.
- Select the **Line** or **Bar** thickness from the **Weight** list.

Thresholds Tab

You can define multiple thresholds per tag in a trend. A threshold is an interesting value (range), where the trend curve "enters" or "leaves" a certain range. For example, you can set a threshold for when a value is suddenly outside its usual range (e.g. "only values between 0 and 10°C are valid") or

when a certain value is met (e.g. “when value drops below 0°C”). [Figure 83](#) illustrates the Thresholds tab.

CAUTION

Do not confuse this feature with the threshold settings in the tag itself.

With addVANTAGE Pro 6.4, each tag, independent from the trend, can have thresholds. When the tag’s thresholds are met, normally an action is performed. The trend’s thresholds are only informational and thus are not the same as the tag’s thresholds.

Figure 83. Trend Properties, Thresholds Tab

Following is an explanation of the options on the **Thresholds** tab shown in [Figure 83](#).

- In the **Thresholds** list, use the **Add**, **Remove**, **Move Up**, and **Move Down** buttons the same way you use them for Tags. In this case, however, when you **Add** a threshold, you will give it a name that has meaning for you.
- **General**
 - **Name** the threshold you added. If you don’t enter a name, addVANTAGE names it something like Threshold 1.
 - Enter a **Value** that determines where the threshold starts.
 - Use the **Label Color** chooser to pick the color of the name or value of the threshold displayed in the trend.
 - Select the **Show name on y-axis** checkbox to display the **Name** of the threshold on the grid, in the color you chose. If you do not select this checkbox, the **Value** will be displayed instead.
 - When you select the **Always show thresholds** checkbox, the threshold always displays on the grid, no matter which sensor is selected in the Legend. When this checkbox is not selected, the threshold displays on the grid only when the corresponding tag is selected in the Legend.
- Use the **Fill** fields to determine an area that should be filled (**Fill to**) from the entered **Value** to a **Base** set in the next field. You can also select **Min. Scale** or **Max. Scale** to draw a fill box in the range between the **Value** and the bottom or top of the plot.
- Use the **Line** fields to determine whether to **Paint** (draw) a line and which color to use, as well as which line **Weight** (thickness) to use.

Display Tab

Following is an explanation of the options on the **Display** tab shown in [Figure 84](#). These options apply to the Trend itself, not the individual tag selected in the Tags list.

Figure 84. Trend Properties, Display Tab

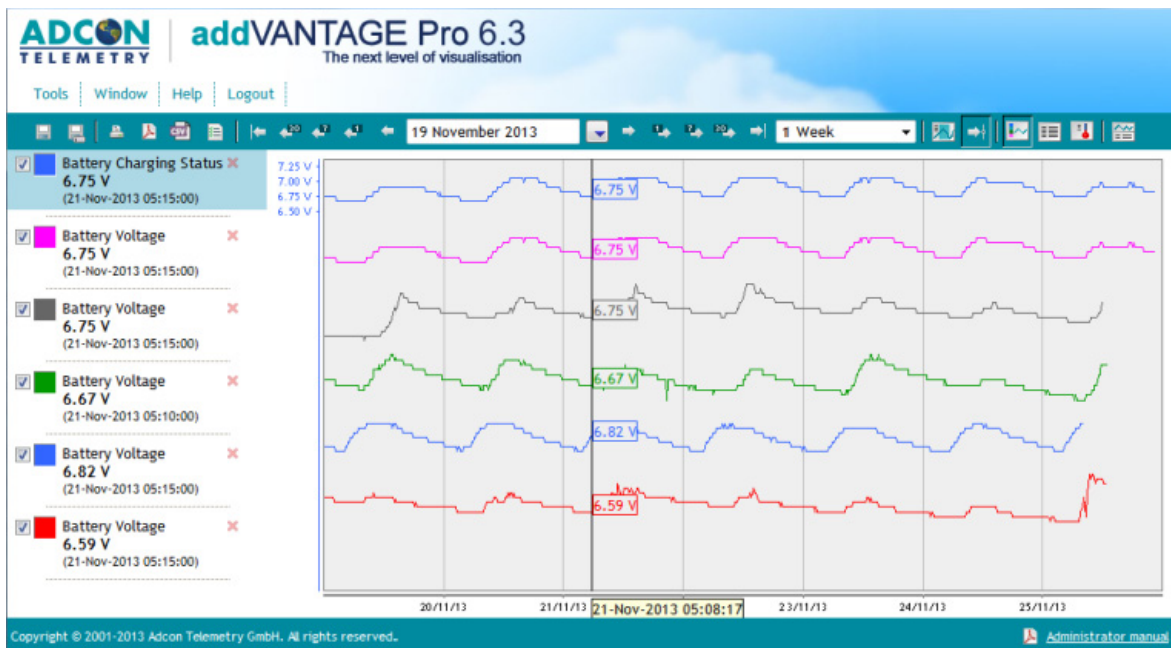
- **Time Axis**
 - If you select the **Major Grid** checkbox, vertical lines will display on the grid. The number of lines is not selectable, but it depends on the selected time range (e.g. 7 lines when 1 Week is selected or one line every 4 hours when 1 Day is selected). Use the color chooser next to the checkbox to specify the vertical line color.
 - The **Time axis color** shows the color of the time axis.
- The **Duration Options** are the same as the duration shown in the toolbar. You can change the duration on this tab or in the toolbar.
- Use the **Gap at end of data** to specify a period of time to appear at the end of the grid with no data, which could be useful, for example, to show when a threshold was reached.
- Use the **Graphic Background Color** chooser to pick a color for the grid's background.
- Use the **Axis background color** chooser to pick the color that displays in the background of the Y and X axes.
- Use the **Legend background color** chooser to pick the color used for the background of the legend along the left side of the dialog.
- The **Show seconds in panels** checkbox works as described on [page 41](#) to determine whether seconds show in displays of time.
- Use the **Show Legend** checkbox to display the Legend next to the grid.
- Use the **Show Values at Cursor** checkbox the same way you use Button 13 in the toolbar. That is, if you select the checkbox and then click the left mouse button, you see the sensor values at that position. Furthermore, you can click and drag the mouse to see all the values.
If the checkbox is not selected, you see certain statistics on the fly. Click and drag the mouse between two vertical lines to see a table with SUM/AVG/MIN/MAX values for all the tags at the bottom of the grid.

A Trend Example

Displaying tags from different areas/RTUs on the same Trend viewer can be very useful. For example, you could set up a panel showing the battery level for a

group of RTUs and be able to inspect or compare them at a glance, such as the example shown in [Figure 85](#).

Figure 85. A Trend Viewer Showing Tags from Several RTUs



You can export all of the data from this graphical view the same way as from the table view, which is described on [page 72](#).

Saving Trends

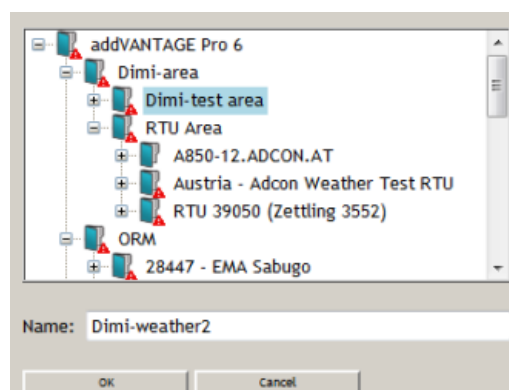
Now that you've configured those tags, you might want to save this panel for later use. If you are working with a data provider rather than your own copy of addVANTAGE Pro 6.4, please make sure that you have the privileges to save your changes.

When you first create a trend or any other type of panel, you must click **Save** or **Save As** in the toolbar to save the panel. You typically use **Save As** when you've made changes to an existing panel and want to save it under a different name. In either case, the Save dialog shown in [Figure 86](#) is displayed.

If you try to close an existing Trend, one of two things happens. If you chose to automatically save panels when you close them ([page 40](#)), the Trend closes with any changes you made saved. If you did not choose to automatically save panels, a pop-up appears, asking if you want to save the Trend viewer. Click **Yes** to display the Save dialog.

Select an area (a folder) where you want your custom Trend viewer saved. It's best to select an area having a certain relationship with the content of the Trend, but there is no rule to prevent you from saving it directly under the root node (except that the name must be unique in that area). Enter an appropriate name in the **Name** field, then click **OK** to save the customized Trend viewer as a panel.

Figure 86. Save Dialog



You can also save a panel any time by clicking **Save**.

Create a Trend from a Template

If you have to create a large number of identical panels on different areas, you can use the **Trend from template** function and save yourself some work:

1. Create a panel in a single area by using one of the methods previously described, then add the tags you need and configure the panel's properties.
2. Save the panel in its area. This will be used later as a template panel.
3. Right-click the areas where you want to save the copied Trends and select **Create New Node ► Panel ► Trend from Template**. A File Open dialog is displayed.
4. Navigate to the area where you saved the template panel and select it, then click **OK**.

The system creates a Trend panel with the same properties as the panel used as the template in each area you selected. If a tag does not exist in the respective area, a placeholder for it is included in the panel, and you can choose to import data from another RTU that does have the tag. The new panels will borrow the name of the original panel used as the template. If a panel with this name already exists in an area, the newly created panel will have a running number appended, for example, **Weather (2)**.

Note: The term "template" is used only for better understanding the concept of creating panels from existing panels. Any panel can be used as a template.

As mentioned in "Using the Node Template Library" on page 56, you can right-click an area where you want to save the new Trend and select **Create New Node ► Using node templates**. In the dialog that opens, navigate to and select the template you want to base the new Trend on, then click **Finish**. Another dialog displays the area and Trend name. When you click **Close**, you'll see the new Trend in your Explorer.

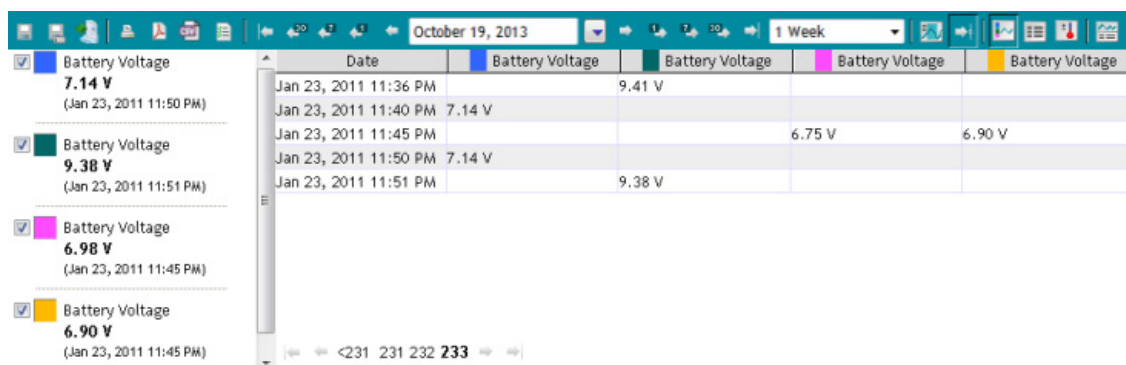
You can also right-click a trend and use the **Cut**, **Copy**, and **Paste** options.

From Trends to Tables


To switch from a graphical view to a tabular view of data, click the **Table view** button previously described (, page 63).

While the legend to the left and the tool bar remain the same, your trend lines will disappear and every value of the time span you selected will appear as a table, as shown in [Figure 87](#). Please note that this usually requires several screens, since a single day of 15-minute data already consists of 96 entries. You can therefore navigate back and forth in time by either clicking the page number or the navigation arrows on the bottom left of the table viewer.

Figure 87. Table View



Date	Battery Voltage	Battery Voltage	Battery Voltage	Battery Voltage
Jan 23, 2011 11:36 PM	9.41 V			
Jan 23, 2011 11:40 PM	7.14 V			
Jan 23, 2011 11:45 PM		6.75 V	6.90 V	
Jan 23, 2011 11:50 PM	7.14 V			
Jan 23, 2011 11:51 PM	9.38 V			

You can click the **Graphical view** button () to return to the graphical display.

You can now edit data in the table view. One way to do this is to double-click a value in the table, type what you want the value to be, and press Enter. The value displays in the table and the cell is highlighted in red. If you change your mind, you can right-click in the cell and select **Remove manual values**.

If you want to add values to the table, right-click in the table and select **Add new values** to display the dialog shown in [Figure 88](#).

Figure 88. Adding a Value in the Table View

Say you manually recorded values in addition to the u's values. You can add them to the table by following these steps:

1. Select the **Tag** from the dropdown.
If you right-clicked a column in the table view, that tag is displayed by default.
2. Select the date and time (**Timestamp**) for the first new value.
3. The **Duration** defaults to the recording interval for the selected tag's values. Change this duration if needed.
4. Enter the **Value** and click **Add**.
The dialog remains, but the timestamp moves to the interval shown in the **Duration** field.
5. Enter any other new values, clicking **Add** each time.
6. When you've entered all the values, click **Close**.
The table will redisplay with the manual values you've just entered highlighted in red.

Note: If you entered values that already existed for the timestamp you selected, they will overwrite the table's values as manual entries.

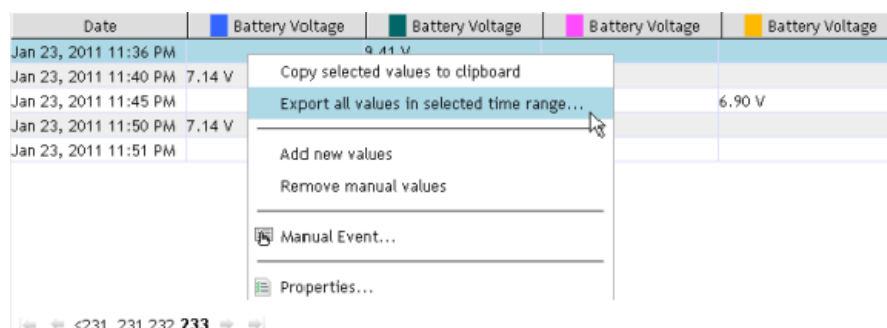
Export data on the fly

While viewing data in the table view you can easily export all or part of it into an ASCII format file. In the graphical view, you can export only all of the data.

Method 1: Exporting all the data

1. Right-click in the body of the table.
2. Choose **Export** from the menu that appears.
3. Depending on your browser, you can open and/or save the file on your computer. The default name of this file is `values.csv`, which you should replace with a more meaningful name.
4. You can now open this file with spreadsheet software such as Excel or OOo.Calc

Figure 89. Export All Data from Table View



The values exported are not limited to the values you can currently see on the screen. This tool will export all the data that you could see in the initial table view, with the start date as shown in the calendar, and the amount of data as shown in the Span area (List 12 on page 63). Look at the example above. What we export in [Figure 89](#) is the data as can be seen in [Figure 87](#): 1 week (calendar), beginning on January 17.

Should you want to export all the data of a selected trend, you need to:

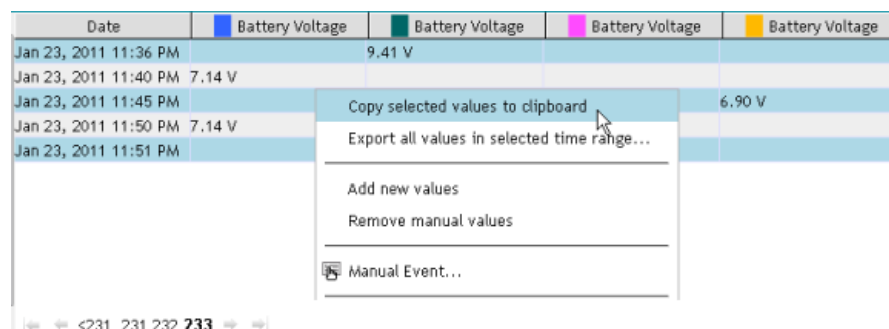
- Set the start date to the beginning of the database (Button 5 - Go to Begin)
- Select **Custom** in the Span Chooser (List 12), then select a reasonable duration that shows all of the data on the **Display** tab.

Method 2: Export selected data sets only (copy to clipboard)

If you want to export only a few lines of data from the current screen, you can copy them to the clipboard.

1. Select data you want to copy (Ctrl+Click or Shift+Click, as shown in [Figure 90](#)).
2. Right-click in the body of the table and select **Copy to clipboard** from the menu that appears.
3. Open a text editor or spreadsheet program such as Excel or OOo.Calc and paste the contents of the clipboard.

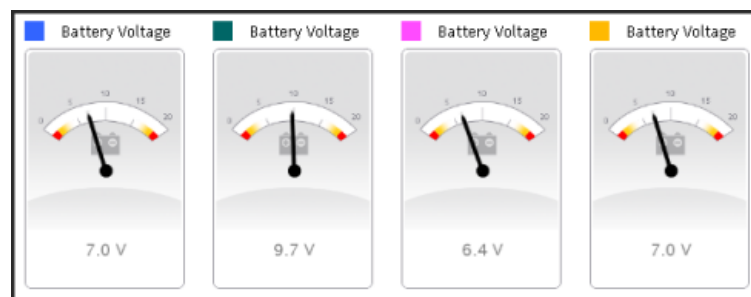
Figure 90. Copying Selected Data into the Clipboard



Instrument View

If you click the **Virtual Instruments** button (), you can view trend data in one other view ([Figure 91](#)), similar to what you might see on an instrument panel.

Figure 91. Trend Viewer Using Virtual Instruments



The Events Viewer

Use the Events viewer to see the events generated by nodes. To create an Events viewer, click **New Panel** and select **Events Viewer**.

You'll notice that the toolbar is very similar to the Trend's toolbar. You are not able to print the Events viewer, but you can click to export the table values to a PDF file. The other buttons up through the time span chooser are identical. The differences after the span chooser are that the Events viewer has an **Acknowledge** button, and no button for switching between views (only the tabular view is available).

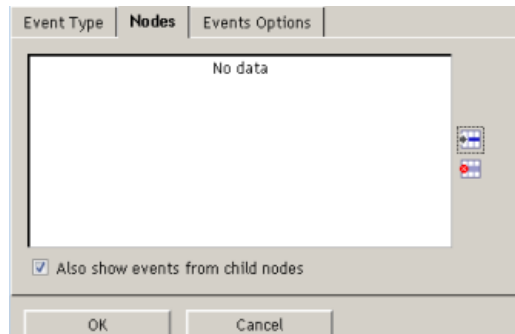
Properties

The Events viewer has extensive configuration possibilities to help you display the events and alarms in the most appropriate way for your needs. In an active Events viewer, click **Properties** to display the Events Options dialog shown in [Figure 94](#).

Selecting Nodes

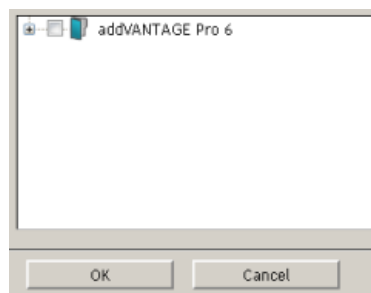
Use the **Nodes** tab ([Figure 92](#)) to select the nodes whose events you want to display. It is the second tab in the Properties dialog, but you must select a node before you can select the event types to display alarms for. With addVANTAGE Pro 6.4, all nodes can issue events.

Figure 92. Events Options Dialog, Nodes Tab



- Click the **Add** button to display the Nodes Chooser ([Figure 93](#)), which you use to add nodes whose events you want to view. You can select the root or expand it to select areas.

Figure 93. The Nodes Chooser



- To remove a node from the Events viewer, select it on the **Nodes** tab and click the **Delete** button.
- Use the **Also show events from child nodes** checkbox to see alarms/events from nodes belonging to the node you selected.

Another way to create an Events viewer is to select the nodes whose events you want to see from the Explorer, then right-click and select **Show Events**. Click **Properties** in the viewer to see the dialogs discussed here.

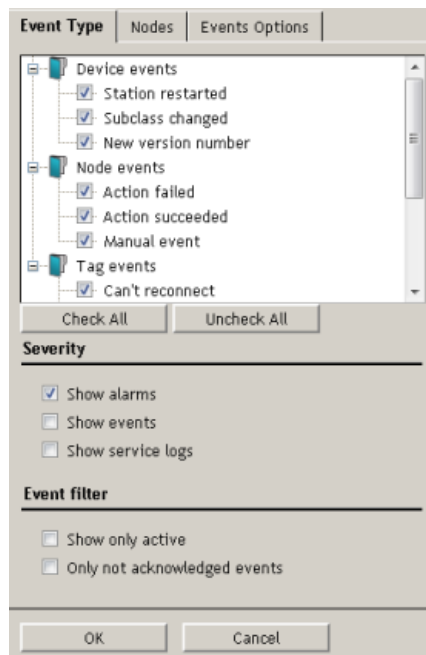
Displaying Event Types

The **Event Types** tab ([Figure 94](#)) displays all of the types of events that can issue an alarm or event. If the tab is blank, you have not selected any nodes (see ["Selecting Nodes" on page 74](#)).

You can drill down in the list to see that all events are selected by default. If you do not want a specific event to display in the Events viewer, unselect it in the

list. Use the **Check All** and **Uncheck All** buttons to select or unselect all events at once.

Figure 94. Events Options Dialog, Event Types Tab



The **Event Types** tab has several options for viewing events.

First, you can select which types of events to view in the Severity section:

- **Show alarms** displays alarms.
- **Show events** displays events.
- **Show service logs** displays messages from the system or from administrators, such as when an RTU has been replaced.

You can also use the Event filter section to further customize the Event Viewer. For example:

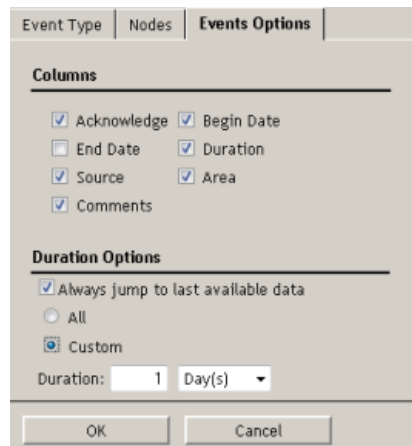
- **Show only active** displays only active alarms/events, depending on your choices for the next two checkboxes. If you leave this checkbox unselected, all alarms/events for the selected span will be displayed in the Events viewer. "Active" is defined as an alarm/event whose end date has not been reached or is unknown.
- **Only not acknowledged events** allows you to display only those messages you have not set as acknowledged.

A new alarm that can be set in an Events viewer is the alarm on delayed data. You can be notified if data has not been received within the maximum data delay set for a data source (see ["Configuring the Data Acquisition Service" on page 50](#)).

Selecting Event Options

The **Events Options** tab (Figure 95) has customization options for the data to be displayed in the viewer.

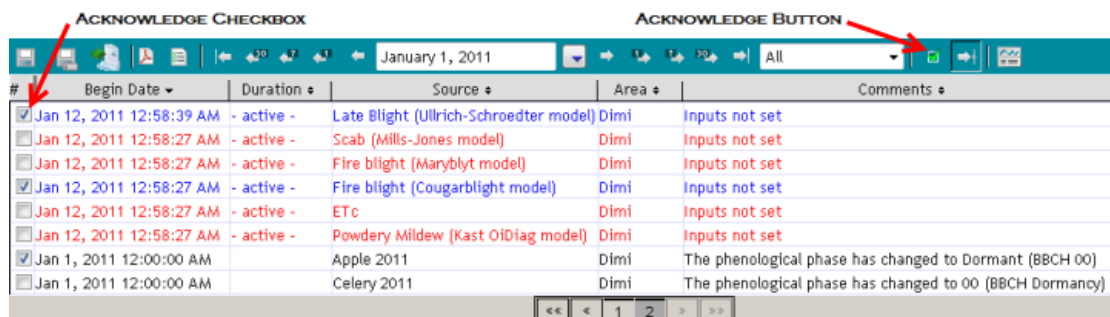
Figure 95. Events Options Dialog, Events Options Tab



- In the **Columns** section, each checkbox represents a column. Select the columns you want to see in the viewer
- The **Duration Options** mirror the settings on the toolbar. You can choose to **Always jump to last available data** or not. If you do select the checkbox, you will either view **All** of the available data or a **Custom** amount—data from the last available to a time frame you specify in **Duration**. As an example, say the tag was installed on January 1, 2009. If you choose **All**, the Events Viewer will display the most recent data—perhaps today's data (the "last available")—back to January 1, 2009. However, if you select **Custom** and then **26 Week(s)**, you'll see the most recent data and back only 6 months from the most recent date.

Click **OK** when you are finished. The Events viewer (Figure 96) shows the events you selected.

Figure 96. Events Viewer Showing Events



Note: If no events are displayed, check the date and use the arrows and the calendar to move to a date and time where you have data.

Event Alarms

By default, alarms are shown in red. If you click the **Acknowledge** checkbox or button, they turn blue, which means that the alarms have been acknowledged.

If an extension issued an alarm, an alarm icon will be shown in the Explorer window by that extension (Figure 97), and the alarm icon will also be shown next to all the parent areas (folders) where the extension resides. Therefore,

while it's the **Statistic** extension that has an alarm, the **Hop** crop and the **Dimi area** folder also show the alarm icon.

Figure 97. Alarm Icons in the Explorer



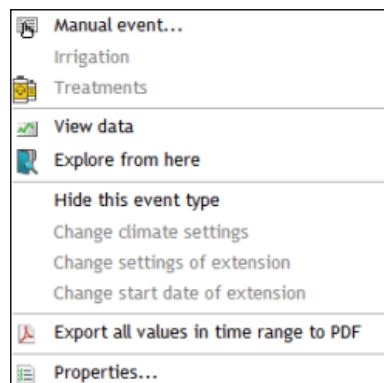
Locating the Source of an Alarm

If you notice in an Explorer that an area shows an alarm, you can right-click the node and select **Show Events**. An Events viewer properly configured for you is displayed, showing only the alarms pertinent to the selected object.

Using the Events Viewer

Right-click an event in an Events viewer to see the context menu shown in [Figure 98](#).

Figure 98. Event Viewer Context Menu



You have several options for working with the events:

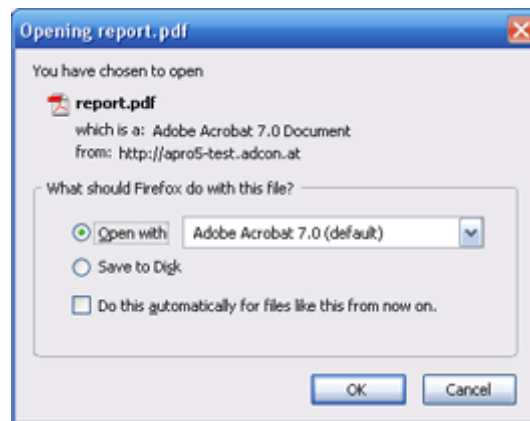
- Select **Manual Event** to manually add an event.
- If you selected a crop event, you can add **Irrigation** or **Treatments** to the crop.
- Create a trend by selecting one or more events, right-clicking, and selecting **View data**.
- Click **Explore from here** to an Explorer showing where the event originated.
- Use **Hide this event type** to hide all events similar to the one you selected in the Events viewer. Show the event type again by going to the **Event Types** tab, clicking **Select All**, and clicking **OK**.
- If appropriate for the event, you can **Change climate settings**, **Change settings of extension**, or **Change start date of extension** from this context menu.
- Use **Export all values in time range to PDF** to view the events in a table in a PDF document.
- Select **Properties** to open the same Properties dialog as when you select **Properties** in the Events viewer toolbar.

Saving the Events Viewer

You can save your Events viewer as a panel, just like you did with the Trend (see also page 70). You can also export events in the table view to a PDF file by right-clicking anywhere in the table and selecting **Export all values in time range to PDF** (see [Figure 98](#)).

The dialog shown in [Figure 99](#) appears.

Figure 99. View/Save dialog for Event List PDF



Notice that the file is named `report.pdf` by default. You can view the document immediately by selecting **Open with**, or you can use **Save to Disk** to save the file to the default location for your downloaded files. If you open the PDF, then save it, it is by default saved in your Temp folder.

When you view the PDF, you'll see that all of the events that are shown in the panel are included.

Create an Events Viewer from a Template

If you have to create a large number of identical panels on different areas, you can use the **Events from template** function and thus save yourself some work:

1. Create a panel in a single area using one of the methods described above, then add the events you need and configure the panel's properties.
2. Save the panel in its area. This will be used later as a template panel.
3. Right-click the selected areas where you want a copy of the Events viewer and choose **Create New Node ► Window ► Events from Template**. A File Open dialog displays.
4. Navigate to the area where you saved the template panel and select it, then click **OK**.

The system creates an Events panel with the same properties as the panel used as the template in each area you selected. If an event source node does not exist in the respective area, it won't be included in the panel. The new panels will borrow the name of the original panel used as the template. If a panel with this name already exists in an area, the newly created panel will have a running number appended, for example, **Statistics (2)**.

Note: *The term "template" is used only for better understanding the concept of creating panels from existing panels. Any panel can be a template.*


As mentioned in ["Using the Node Template Library" on page 56](#), you can right-click an area where you want to save the new Event viewer and select **Create New Node ► Using node templates**. In the dialog that opens, navigate to and select the template you want to base the new Event viewer on, then click **Finish**. Another dialog displays the area and Event viewer name. When you click **Close**, you'll see the new Event viewer in your Explorer.

You can right-click any event and use the **Cut**, **Copy**, and **Paste** options to duplicate the Event viewer in another part of the Explorer.

Linked Panels

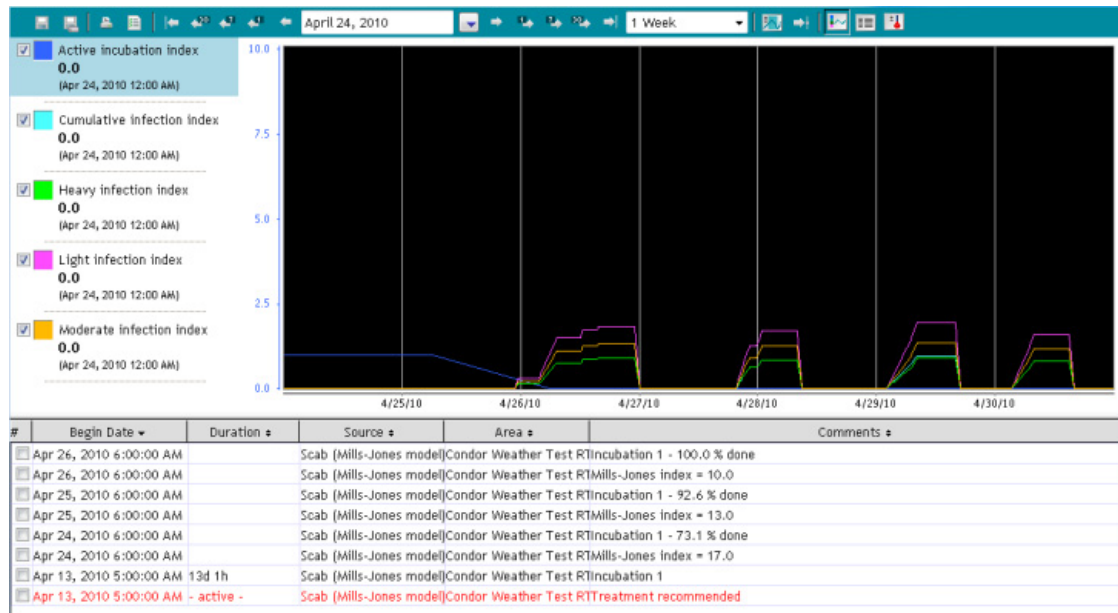
You can link two panels by combining them in a single window. You can then use the standard navigation methods to "move" both panels synchronously in time.

Note: *Only Trend and Events panels can be linked.*

To combine two panels, click the **Link to another window** button () on the toolbar of one of the panels. In the Explorer that is displayed, navigate to and select the panel you want to link, then click **OK**. A new panel will be created. You can now save the linked panel for future use, just like any other panel ([Figure 100](#)).

Note: The original panels are not affected.

Figure 100. Linked Panels



To change the properties of an individual panel, right-click the appropriate panel and select **Properties**.

Chapter 6. Working with Extensions and Crops

As with previous versions, the addVANTAGE Pro 6.4 software has extended functionality through additional software modules called *extensions*. Extensions are entities that perform calculations.

The types of extensions you work with are *calculation extensions* and *disease models*. Crops are nodes that store information about phenophases, irrigations, and treatments. They are not extensions. Disease models and calculation extensions are relatively new to addVANTAGE Pro. Disease models are extensions that apply only to crops. They “hear” events issued by the crop. Calculation extensions usually apply to an area. Although they can be children of a crop node, calculation extensions do not “hear” events issued by the crop (such as when a treatment is applied).

Another set of extensions now available is called RTU diagnostics. These diagnostic extensions are associated with RTU tags and they verify whether the data coming from a tag is plausible. The configuration of these extensions is related to climate, which is why you learned about the Climate Manager on [page 58](#) of Chapter 4.

You can right-click any extension or crop and use the **Cut**, **Copy**, and **Paste** options to duplicate the extension or crop in another part of the Explorer.

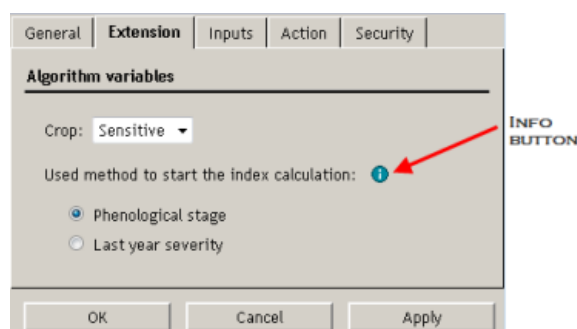
About addVANTAGE Pro Extensions

Some extensions are included with the software and others can be installed separately. For example, Adcon Telemetry provides a collection of calculation extensions and disease models (still collectively known as extensions) in a package you can receive free of charge upon request from your Adcon distributor. These extensions are documented in a separate *addVANTAGE Pro 6.1 Extensions and Crops* manual. This manual is located on the software CD, which also contains these free extensions, or you can download it from Adcon Telemetry’s website at <http://www.adcon.at>.

The Info Button

You will also find that certain calculation extensions and disease models have additional information available in the software itself, on their Properties dialog’s **Extension** tab. When you see an “info” button like the one shown in [Figure 101](#), click it to open a dialog with additional information about using the extension.

Figure 101. Info Button for Apply Powdery Mildew (Kast OiDiag) Extension



Recalculating Extensions and Crops

An extension will automatically recalculate some properties in the input data sets if their options have been changed. This operation usually takes only a couple of seconds, but in extreme cases (large data sets or many extensions

running in parallel) it can take up to several minutes. The properties in the **Crops, Treatments, Inputs, Irrigation** and **Extension** tabs may force a recalculation if changed. You can also force a recalculation of one or more extensions by selecting the respective extension in the Explorer, right-clicking, and selecting **Recalculate**.

Adding Extensions and Crops to an Area

Extensions can be added to areas and crops, while crops can be added only to areas. To add either, follow these steps:

1. Open an Explorer.
2. Select where you want the extension or crop added (use the shift and control keys if you're selecting multiple locations).
3. Right-click the highlighted areas and select **Create New Node ► Calculation extension ► extension** or **Create New Node ► Crops ► crop**.

The extension or crop is added to the area in the Explorer, where you can configure it as needed. When you add a crop, all of the disease models of the crop are created by default.

Adding Multiple Extensions and Crops

You can add multiple extensions and crops to the same area and create different settings for each. Subsequent extensions and crops in the same area take the name of the first, but with a number appended (for example, **Apple [1]** or **Running Total [1]**).

You can also edit multiple extensions and crops. Use Ctrl+Click to select the nodes, then click **Properties**. If the selected extensions are not identical, only their common properties will be displayed.

Using Templates to Add Extensions or Crops

You can add an extension or crop by creating it from a template, that is, from an existing extension or crop.

1. Add the extension or crop in a single area using one of the methods described above and set up its properties as you want to.
2. Right-click the selected areas where you want a copy of the extension or crop and select **Create New Node ► Calculation extension ► Create from template** or **Create New Node ► Crops ► Create from template**. A File Open dialog displays.
3. Navigate to the area where you saved the template panel and select it, then click **OK**.

The system creates the extension or crop with the same properties as the one used as the template in each area you selected. All child extensions will also be created.

You can also install extensions and crops using node template by right-clicking an areas and selecting **Create New Node ► Using node templates**. Select the appropriate template and click **Finish** to add the extension or crop. See ["Using the Node Template Library" on page 56](#) for an explanation of the node template library.

Adding a New Season to a Crop

In a way that is similar to creating a crop by template, you can start a new season of a crop. This procedure is probably more useful for the previous year's crops because it copies the crop properties but uses current dates.

1. In the Explorer, right-click the crop you want to copy for the new season and select **Create New Node ► Start new season**.
2. Update the new crop's properties or move it to another area as needed.

Adding RTU Diagnostics to a Tag

RTU diagnostics can be added only to tags or sensors. To add these diagnostic extensions, follow these steps:

1. Open an Explorer.

2. Select the sensor where you want the diagnostic extension added (use the shift and control keys if you're selecting multiple sensors).
3. Right-click the highlighted areas and select **Create New Node ▶ RTU diagnostics ▶ extension**.

You can also select **Create New Node ▶ RTU diagnostics ▶ Create all missing** or **Create New Node ▶ RTU diagnostics ▶ Create from template**. With the first option, all missing diagnostic extensions are added to the sensor. The second options allows you to use a template to create the diagnostic extension, the same as you would in [Using Templates to Add Extensions or Crops](#) above.

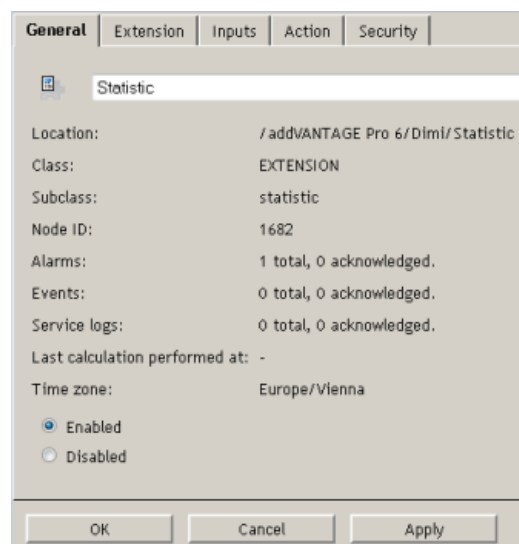
Alternatively, you can all select of the RTUs in an Explorer or a List and then right-click and select **Create New Node ▶ RTU diagnostics ▶ Create all missing**.

The extension is added to the sensor in the Explorer, where you can configure it as needed.

Properties for Extensions and Crops

Some extensions and crops must be configured. To display the properties ([Figure 102](#)), highlight the extension or crop in the Explorer and click the **Properties** icon.

Figure 102. Statistics Extension Properties Dialog, General Tab



Common Properties

[Figure 102](#) shows the properties specific to the **Statistics** calculation extension.

The **General** tab displays general information about the extension/crop, and for calculation extensions and disease models, allows you to enable or disable individual extensions. If you look closely at the extension's icon, you can tell whether the extension is enabled or disabled.

The green triangle in the bottom left corner indicates the extension is enabled.



The gray square in the bottom left corner indicates the extension is disabled.



If an extension is being executed, the green triangle appears to move across the bottom of the icon.

The **Action** and **Security** tabs are discussed in Chapter 4, beginning on [page 33](#)

Properties for Crops

Three additional tabs pertain to crops.

The Crop Tab

Use the **Crop** tab (Figure 103) to specify and monitor the phenological stages of crops.

Figure 103. Apple Crop Properties, Crop Tab

BBCH	Name	Date	
00	Dormant	Jan 1, 2011	
07	Bud Break	Mar 12, 2011	
09	Green tip	Mar 19, 2011	
55	First flower buds visible	Apr 26, 2011	
57	Pink Bud	May 6, 2011	
65	Bloom	May 21, 2011	
69	Post bloom	Jun 5, 2011	
72	Fruit Size up to 20 mm	Jun 30, 2011	
87	Fruit Ripe for Picking	Aug 29, 2011	

Note: Clicking a phase causes a graphic depiction of the phase to be displayed on the right side of the dialog, if such a graphic is available.

Changing Dates for Phenological Phases

In principle, the system can be installed anytime, but starting it at the beginning of the growing season has certain advantages. The software uses a calendar year with the appropriate phase dates set, but you can change these dates. Do this by using the **Crops** panel, which sets the proper phenological phase.

To set the season or phase starting date, complete the following steps (Figure 104):

1. Right-click the crop and select **Properties**.
2. Click the **Crop** tab.
3. Select the desired phase in the **Name** column.
4. Click the calendar icon and select the date for the phase to begin, then click **Apply**.

Figure 104. Setting a Phase's Start Date

BBCH	Name	Date	
00	Dormant	Jan 1, 2011	
07	Bud Break	Mar 12, 2011	
09	Green tip	Mar 19, 2011	
55	First flower buds visible	Apr 26, 2011	
57	Pink Bud	May 6, 2011	
65	Bloom	May 21, 2011	
69	Post bloom	Jun 5, 2011	
72	Fruit Size up to 20 mm	Jun 30, 2011	
87	Fruit Ripe for Picking	Aug 29, 2011	

Generally, the first phenological phase corresponds with the year's begin in the northern hemisphere, that is the 1st of January. After you set the date for a phase, dates for subsequent phases are automatically computed from the defaults programmed for each crop.

Climatic conditions during certain seasons could differ from the pre-programmed defaults, so Adcon recommends that you verify at regular intervals whether the model is in synchronicity with the field conditions. If this is not the case, use the method described above to change each individual phase's date accordingly.

The Treatments Tab

Use the **Treatments** tab (Figure 105) to inform the crop that a chemical treatment was applied.

If the chemical you want to apply is not in the system's database, you must first add it. For more details about adding to or modifying the chemicals database, refer to the *addVANTAGE Pro 6.1 Extensions and Crops* manual.

Figure 105. Apple Crop Properties, Treatments Tab

Application date	Chemical	Remark
Mar 26, 2010 5:04:00	Systemic - SCAB	

Adding Treatments

A spraying application usually follows a treatment recommendation (displayed in the Events list). To inform the model you applied a field treatment, do the following (Figure 106):

1. Right-click the crop and select **Properties**.
2. Click the **Treatments** tab, then the **Add** icon.

Figure 106. Applying a treatment

3. Select the chemical you applied in the field from the list.
4. In the **Application date** field, click the calendar icon to select the correct treatment date and time from the pop-up that appears.

Note: The wording shown to the right of the calendar icon indicates the server's location.

5. Enter a **Remark**. (optional)
6. Press **OK** when you are done.

Note: If you want to add a spray for more than one disease (even if the chemicals used are identical), you have to perform this operation for each individual disease for which the treatment is valid.

If you decide that you don't need to apply a treatment, e.g. if other circumstances determine a treatment is not warranted, you must select the entry "Warning ignored" from the chemicals list. Whatever the case is, you must either apply a treatment or choose to ignore the warning. Failure to do so will leave the current alarm active and no new warnings will be issued.

Removing a Treatment

If you added a treatment and you find out at a later date that it was incorrect (either the date of application, or the type of chemical), you can delete the treatment and add the correct one, if needed. Proceed as follows:

1. Right-click the crop and select **Properties**.
2. Click the **Treatments** tab.
3. Select the treatment from the lower list and click the **Remove** icon.
4. Click the **OK** button.

The system automatically recalculates the model's new data.

The Irrigation Tab

Use the **Irrigation** tab (Figure 107) to create irrigation schedules for the crop.

Figure 107. Apple Crop Properties, Irrigation Tab

Application date	Duration	Quantity	Remark
Mar 1, 2010 4:00:00 AM	12h	3.0 mm	initial irrigation

Adding an Irrigation Schedule

When you add an irrigation schedule, you are telling the model what type of irrigation, how long the irrigation occurs, and how much irrigation the crop gets (Figure 108). Follow these steps to add this schedule:

1. Right-click the crop and select **Properties**.
2. Click the **Irrigation** tab, then the **Add** icon.

Figure 108. Adding Irrigation

3. Select the **Irrigation Type**.
4. In the **Application date** field, click the calendar icon to select the correct treatment date and time from the pop-up that appears.

Note: The wording shown to the right of the calendar icon indicates the server's location.

5. In the **Duration** field, enter how long the irrigation lasted, in days, hours, and/or minutes.
6. In the **Quantity** field, enter how much water was sent to the crop.
7. Enter a **Remark**. (optional)
8. Press **OK** when you are done.

Removing an Irrigation Schedule

If you added an irrigation and you find out at a later date that it was incorrect, you can delete the treatment and add the correct one, if needed. Proceed as follows:

1. Right-click the crop and select **Properties**.
2. Click the **Irrigation** tab.
3. Select the appropriate irrigation schedule from the lower list and click the **Remove** icon.
4. Click the **OK** button.

Properties for Calculation Extensions and Disease Models

Calculation extensions and disease models have tabs that are different from the ones for crops.

The Extension Tab

Most calculation extensions have an **Extension** tab, as shown in [Figure 109](#).

Figure 109. Statistic Extension Properties, Extension Tab

Schedule

Begin date: ☐ Time zone: CET
 End date: ☐ Time zone: CET
 Begin time: 23 : 59

Scheduling

Calculate one value per 1 Day(s)
 Use values of the last 1 Day(s)

Computations

☐ Minimum
☐ Maximum
☐ (Min + Max) / 2
☐ Average
☐ Sum
☐ Circular average

OK Cancel Apply

The **Extension** tab contains options and configuration panels that are specific to the extension.

The Advanced Settings Tab

The **Advanced settings** tab ([Figure 110](#)) provides additional information about the extension options.

Figure 110. Statistic Extension Properties, Advanced Settings Tab

Name	Type	Value	Unit
AVG	Boolean	false	
MAX	Boolean	false	
MID	Boolean	false	
MIN	Boolean	false	
SUM	Boolean	false	
cAVG	Boolean	false	

Reset to default

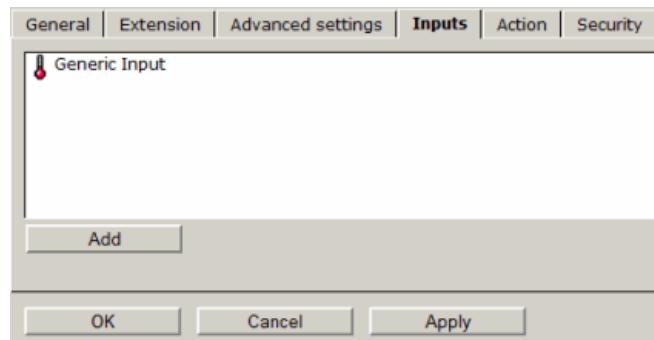
OK Cancel Apply

Note that your ability to see the **Advanced Settings** tab is determined by your user role and a setting in the **Tools** menu.

The Inputs Tab

The **Inputs** tab ([Figure 111](#)) allows you to set the input tags for the extension. The extensions have an intelligent algorithm that searches for the appropriate tags, but only within the extension's own area.

Figure 111. Extension Properties Dialog, Inputs Tab



Adding Inputs

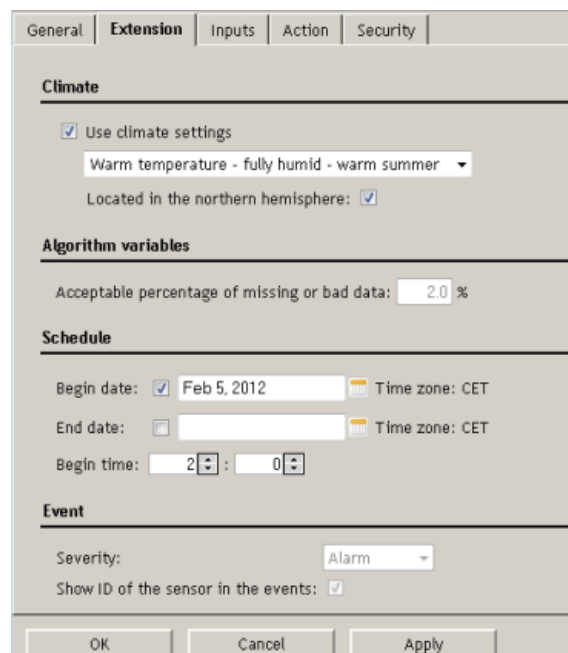
If some tags are missing and the auto discovery feature fails, you should manually intervene to identify the required tags. If multiple tags of the same type exist on a given area, you will have to manually select which tag type you want. You can also choose tags from other areas if you need the same type of tag in more than one area, or if the application can be used with tags from other areas.

For more details about calculation extensions and disease models, please consult the *addVANTAGE Pro 6.1 Extensions and Crops* manual.

Extension Properties for Diagnostic Extensions

Although the diagnostic extensions have the same properties as calculation extensions, the **Extensions** tab has some differences, as you can see [Figure 112](#).

Figure 112. Diagnostic Extension Properties, Extensions Tab



RTU diagnostics are tied to the 30 climate options you can choose from. Your climate was most likely selected for you when you installed the RTU and is based on your GPS location, although you can select a different climate. Climate characteristics are controlled through the Climate Manager, discussed in ["Using the Climate Manager" on page 58](#).

The properties shown in [Figure 112](#) are for a Missing Data diagnostic extension of a temperature sensor. If you use one of the available climates, you must use the **Algorithm variable** and **Event** settings that are associated with it. However,

you can unselect the **Use climate settings** checkbox and enter or select the data you want. The **Schedule** settings are the same as for calculation extensions.

Appendix. Appendix

This appendix contains additional information concerning your addVANTAGE Pro server installation, configuration, and maintenance. You'll also learn which third-party tools Adcon employs.

Upgrading From Previous addVANTAGE Releases

Depending on the version of addVANTAGE you already have, and whether you want to continue using the data you already collected, two options are available. We assume that you will want to continue using the data already collected in the database, but if not, you can skip this entire section.

addVANTAGE Pro Versions 5.1 through 6.1

The `convert.bat` utility opens the interface you use to convert old databases. The following figures illustrate how this utility works. You can use the `convert.bat` utility to convert addVANTAGE Pro 5.1 through 6.1 databases.

Figure 113 shows the window that is displayed if you are already using an addVANTAGE Pro 6.2 database.

Figure 113. Database Conversion Window when Previous Database Exists

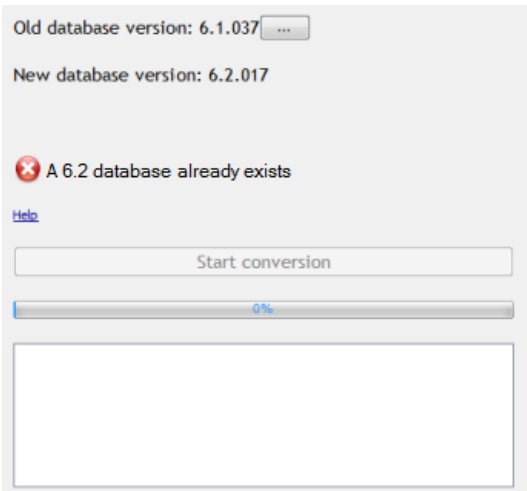
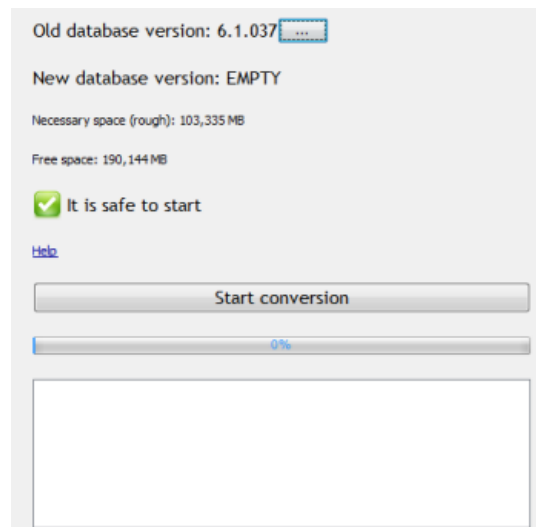


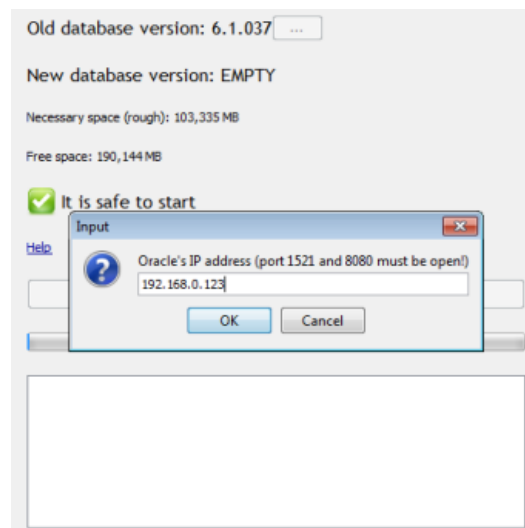
Figure 114 shows the first window of the conversion tool when no local 6.2 database was found. The conversion is ready to start.

Figure 114. Database Conversion is Ready to Begin



Note: If you are an expert user who needs to convert a database, you can click the ellipses (...) to open a dialog (Figure 115) where you can enter a different IP address to use for the conversion.

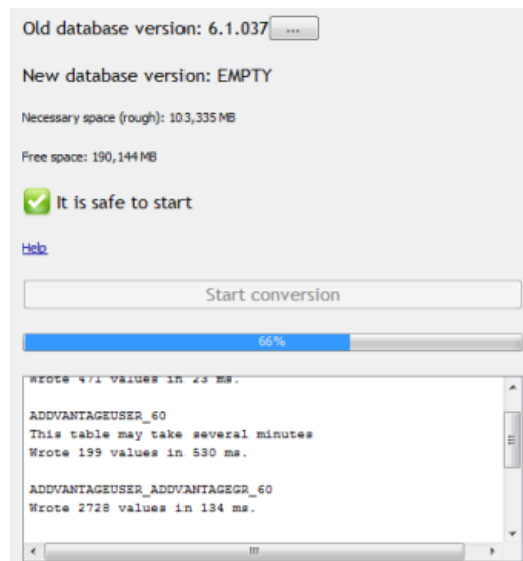
Figure 115. Changing the IP Address for Database Conversion (Experts Only)



Click **Start conversion** when you're ready to begin converting the database.

Figure 116 shows the conversion in progress.

Figure 116. Database Conversion is in Progress



addVANTAGE Pro Versions Prior to 5.1

If your database format is earlier than addVANTAGE Pro 5.1, please contact Adcon Telemetry (info@adcon.at).

Fine-tuning your addVANTAGE Pro Server

During the initial setup procedure, certain parameters of your addVANTAGE Pro 6.4 server are set to defaults considered applicable for most installations. However, depending on your particular conditions (configuration, number of users, number of extensions, machine parameters such as memory, and so forth) you might want to change some of the defaults.

Editing Memory Settings

To this end, locate the file `uservars.bat` in the `addVANTAGE-Pro\bin` directory where most of these defaults are placed. The following entry might be of interest to you:

```
set JAVA_MAX_MEM=768
```

The above value defines the amount of RAM (in MB) used by the JVM. If the machine running the addVANTAGE Pro server has large amounts of RAM, you might want to increase it. The system's speed will improve, especially under conditions of heavy load. The above value is suggested for a server with 1 GB RAM. If your server has, for example, 2 GB RAM, you might increase the `JAVA_MAX_MEM` to 1536.

Note: Use an editor such as Notepad to edit the `uservars.bat` file. Use caution when changing parameters, otherwise you could render your addVANTAGE Pro system inoperable. Adcon recommends that you first make a copy of the original distribution file before attempting to modify it.

Creating a Dial-up Connection to the Data Source

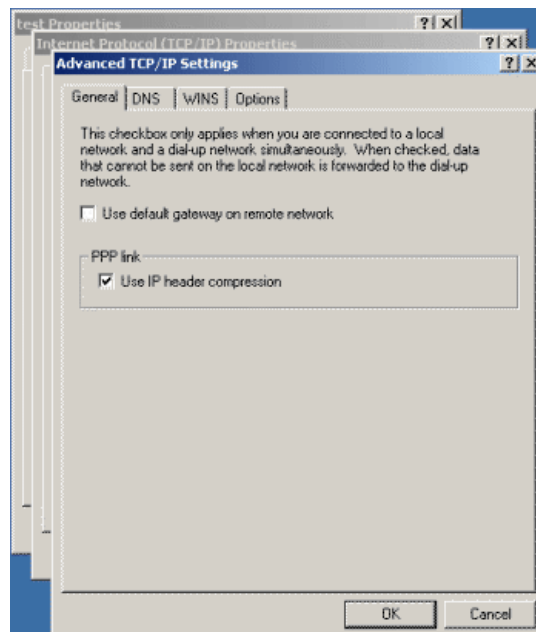
You have to create a dial-up profile at the operating system level (RAS in Windows) for each remote server you want to call. Figure 117 shows some of the settings used in the dial-up profile.

Note: This operation is done externally, that is, not in addVANTAGE Pro but at the operating system level. For more details, check your operating system's user guide or the online Help.

After you have created a dial-up profile for each remote server, Adcon recommends that you test (by manually calling) all these profiles to ensure that you can connect to the remote servers. If everything works, return to

addVANTAGE Pro and select one of the RAS profiles you just created from the dial-up connection dropdown shown in [Figure 59 on page 51](#).

Figure 117. RAS Advanced TCP/IP Settings in Windows 2000 and XP



Note: The dial-up feature is currently implemented and works only under Windows 2000 and XP. For these operating systems, note that the option "Use default gateway on remote network" must be unselected. To find this option, open the Properties dialog of the RAS profile. Select the **Networking** tab, select **Internet Protocol (TCP/IP)** and click **Properties**, then click **Advanced** and select the **General** tab (see also [Figure 117](#)). In addition, if the addVANTAGE Pro server is started as a service, both the service and the RAS profiles must belong to the same Windows user/group (for example, Administrator). Otherwise, the server will not be able to use the RAS profiles. By default a service under Windows is installed and run as user System, so you will need to explicitly change this.

Public Trends

If a Trend is set as being publicly available (see [page 36](#)), you must use these parameters to access it:

mandatory: `http://localhost:8080/trend/graph?panel=YOUR_PANEL_ID`

mandatory: `&public=true`

optional: `&width=500`

optional: `&height=500`

optional: `&beginDate=20070101T00:00:00`

optional: `&hours=168`

optional: `&tagIndex=1`

optional: `&showLegend=true`

- The panel is the node ID of the panel you'd like to view. You cannot view a panel that has not been saved.
- The public parameter helps you avoid mixing up the logged-in user and accessing a trend publicly. Since it is mandatory, you will probably get an Exception if you don't include the parameter.
- The width and height are the width/height of the requested picture in pixels. The default values are a width of 700 and a height of 350.
- The beginDate is the date the trend should start with when it is accessed. If you leave this parameter out, the Trend picture will be set to the date it would use when opening it within addVANTAGE. The beginDate must be in UTC (also known as coordinated universal time). There are two formats used for beginDate:
 - The number of seconds since 01.01.1970 can be 1203897600 to represent today's date. Java/JavaScript programmers can easily access this number by standard methods.
 - The format that is already used in addUPI: `yyyymmddThh:mm:ss`, such as `20080101T00:00:00`.

The way addVANTAGE decides if this is the first or second format is the T between the date and time. If the T is contained, the second format is assumed.

- The hours is the number of hours you'd like to view. If you don't set this parameter, the default is the number of hours most recently used when the panel was opened in addVANTAGE.
- The tagIndex is the number of the tag that is selected (which is important for displaying the y-Axis). If you omit this parameter, the first tag is selected.
- The showLegend flag indicates whether to display a Legend at the bottom of the picture (the position is not easily changeable). If you omit this parameter, no legend is shown.

Example: Normal, no additions

```
http://apro5-test.adcon.at:8080/trend/
graph?panel=348&public=true
```

Example: with starting date January, 2nd 2008 at 01:30:00

```
http://apro5-test.adcon.at:8080/trend/
graph?panel=348&public=true&beginDate=20080102T01:30:00
```

Please further note that NONE of the data is cached—everything is read from the database and rendered. If you use this feature, be aware that if many users access the trend, the server could slow down unless you use your own caching strategy.

What User Settings Are Used

When a trend is publicly accessed, no user is logged in, so there is no possibility to tell the server which language/unit settings should be used. Thus, the trend is shown in the language settings that are used as the server's default language (see *"Selecting User Options" on page 40*).

Setting up a Public Trend

Follow these steps to set up a public trend:

1. In the Explorer right-click the trend that should be public and select **Properties**.
2. Select the **Security** tab.
3. Click the checkbox in the **Availability** pane.
4. Click **OK** to save.

Third-Party Tools

The following tools are used in the addVANTAGE Project. You can find the actual license agreement for each tool in our separate addVANTAGE Pro Third-Party License Agreements document.

ant.jar

Version 1.6.2

<http://ant.apache.org>

Apache License Version 2.0, January 2004

Used to compile the project with dependencies on other project parts

antlr-2.7.6.jar

Version 2.7.6, Current Version 3.2

<http://www.antlr.org/>

Freeware

Database framework

backport-util-concurrent-3.0.jar

Version 3.0, Current Version 3.1

<http://backport-jsr166.sourceforge.net/>

Creative Common Public Domain

Database framework

bcprov-jdk14-131.jar
Version 1.31, Current Version 1.37
<http://www.bouncycastle.org/>
MIT License
keymanager.RSACipher

commons-beanutils.jar
Version 1.7, Current Version 1.8.3
<http://jakarta.apache.org/commons/beanutils/>
The Apache Software License, Version 1.1
Toolkit which is used for webdevelopment

commons-codec-1.3.jar
Version 1.3, Current Version 1.3
<http://jakarta.apache.org/commons/codec/>
Apache License Version 2.0, January 2004
Used to en-/decode binary data

commons-collections-3.1.jar
Version 3.1, Current Version 3.2
<http://jakarta.apache.org/commons/collections/>
Apache License Version 2.0, January 2004
Helper for webapplication

commons-compress-1.4.1.jar
Version 1.4.1
<http://commons.apache.org/proper/commons-compress/>
Apache License Version 2.0, January 2004
zipping/unzipping files (backups, mail attachments)

commons-digester.jar
Version 1.8, Current Version 3.2
<http://jakarta.apache.org/commons/digester/>
The Apache Software License, Version 1.1
Toolkit which is used for webdevelopment

commons-discovery-0.4.jar
Version 0.4, Current Version 0.4
<http://commons.apache.org/discovery/>
Apache License Version 2.0, January 2004
Webapp programming framework

commons-fileupload-1.3.jar
Version 1.3
<http://commons.apache.org/proper/commons-fileupload/>
Apache License Version 2.0, January 2004
to upload&import node templates

commons-io-2.4.jar
Version 2.4
<http://commons.apache.org/io/>
Apache License Version 2.0, January 2004
handling text files

commons-logging.jar
Version 1.0.4, Current Version 1.1
<http://jakarta.apache.org/commons/logging/>
Apache License Version 2.0, January 2004
Helper for Scheduler (Quartz)

commons-logging-api.jar
Version 1.0.4, Current Version 1.1
<http://jakarta.apache.org/commons/logging/>
Apache License Version 2.0, January 2004
Helper for Scheduler (Quartz)

commons-net-3.1.jar
Version 3.1
<http://commons.apache.org/proper/commons-net/>
Apache License Version 2.0, January 2004
export extensions, FTP Queue

commons-validator.jar
Version 1.1.3, Current Version 1.3.1
<http://jakarta.apache.org/commons/validator/>
Apache License Version 2.0, January 2004
Used to validate entries in webapplication

datetimepicker2.7.jar
Version 2.7, Current Version 2.7
<http://www.lavantech.com/datetimepicker/>
Bought - <http://www.lavantech.com/license.shtml>
Used to set addMIN's update Backup time

dom4j-1.6.1.jar
Version 1.6.1, Current Version 1.6.1
<http://www.dom4j.org/>
BSD license
For all parts that are by SPG

ehcache-1.5.0.jar
Version 1.5.0, Current Version 1.7.2
<http://ehcache.org/>
Apache License Version 2.0, January 2004
Database framework

ejb3-persistence.jar
Version 3.0 FR (1.0.1.GA)
basically MIT
Database framework

gmaps4jsf-1.1.3-u3.jar
Version 1.1.3
<http://code.google.com/p/gmaps4jsf/>
Apache License Version 2.0, January 2004
Google maps implementation

gson-2.2.2.jar
Version 2.2.2
<http://code.google.com/p/google-gson/>
Apache License Version 2.0, January 2004
making webapp programming easier

hibernate-annotations.jar
Version 3.4.0.GA, Current Version 3.4.0.GA
<http://annotations.hibernate.org>
LGPL
Database framework

hibernate-commons-annotations.jar
Version 3.1.0.GA
<http://annotations.hibernate.org>
LGPL
Database framework

hibernate3.jar
Version 3.4.0.GA, Current Version 4.0.1.GA
<https://www.hibernate.org/344.html>
LGPL
Database framework

hibernate-entitymanager.jar
Version 3.4.0.GA, Current Version 3.4.0 GA
<https://www.hibernate.org/397.html>
LGPL
Database framework

hsqldb.jar
Adcon-Version
<http://hsqldb.org/>
LGPL (Version 3, June 2007)
Database

iText-2.0.7.jar
Version 2.0.7, Current Version 5.0.0
<http://itextpdf.com/>
LGPL (Version 2.1, February 1999)
PDF creation

jaas.jar
<http://java.sun.com/javase/technologies/security/>
Sun binary code license (~Freeware)
Used in authentication

JainSipApi1.2.jar
Version 1.2
<http://jain-sip.dev.java.net/>
Public Domain, SIP Calls

JainSipRi1.2.jar
Version 1.2
<http://jain-sip.dev.java.net/>
Public Domain, SIP Calls

jvamelody-1.25.0.jar
Version 1.25.0
<http://code.google.com/p/jvamelody/>
LGPL (Version 3, June 2007)
Monitoring tool

javassist-3.4.GA.jar
Version 3.4.GA, Current Version 3.11.0.GA
<http://www.csg.is.titech.ac.jp/~chiba/javassist/>
LGPL
Database framework

javasysmon-0.3.4.jar (com.jezhumble.javasysmon.JavaSysMon)
Version 0.3.4
<https://github.com/jezhumble/javasysmon>
NetBSD (2-line) license
CPU usage monitor

jaxen-1.1.1.jar
Version 1.1.1, Current Version 1.1.1
<http://jaxen.org/>
Apache style, Attached
XPath in DOM4J (webapp)

JbcParser.jar
Version 3.7, Current Version 3.7
<http://www.bestcode.com/html/jbcparser.html>
Bought
Basic arithmetic extension parser

jcommon-1.0.10.jar
Version 1.0.10, Current Version 1.0.10
<http://www.jfree.org/jfreechart/>
LGPL (Version 3, June 2007)
Chart drawing tool

jfreechart-1.1.1_adcon.jar
Version 1.1_adcon, Current Version 1.0.6
<http://www.jfree.org/jfreechart/>
LGPL (Version 3, June 2007)
Chart drawing tool

jmf.jar
<http://java.sun.com/products/java-media/jmf/>
JMF License
Java Media Framework, used to play Wave files in SIP calls

jsf-api-1.2_04-p02.jar
Version 1.2_04-b16-p02, Current Version 2.0
<http://java.sun.com/javaee/javaxserverfaces/reference/api/>
CDDL (parts Apache)
Webapp programming framework

jsf-facelets.jar
Version 1.1.14
<https://facelets.dev.java.net/>
Apache License Version 2.0, January 2004
Webapp programming framework

jRegistryKey.jar
Version 1.4.5
<https://sourceforge.net/projects/jregistrykey/>
LGPL (Version 2.1, February 1999)
Tool to read/write the windows registry (addTray)

jspeex.jar
Version 0.9.7
<http://jspeex.sourceforge.net/index.php>
BSD License
Used in SIP Calls

jta-1.1.1.jar
1.1
1.1
<http://java.sun.com/javaee/technologies/jta/index.jsp>
Attached
Database framework

log4j-1.2.14.jar
Version 1.2.14, Current Version 1.2.14
<http://logging.apache.org/log4j/docs>
The Apache Software License, Version 1.1
Used to create logfiles depending on the loglevel and package name

mail.jar
Version 1.2, Current Version 1.4
<http://java.sun.com/products/javamail/>
Click Download / you must accept License
Used to handle E-Mail

minimalSipCaller.jar
Derived from <http://sip-communicator.org>
LGPL (Version 2.1, February 1999)
Used in SIP Calls

myfaces-api-1.2.3.jar
Version 1.2.3, Current Version 2.0.0-alpha
<http://myfaces.apache.org/>
Apache License Version 2.0, January 2004
Webapp programming framework

myfaces-impl-1.2.3.jar
Version 1.2.3, Current Version 2.0.0-alpha
<http://myfaces.apache.org/>
Apache License Version 2.0, January 2004
Webapp programming framework

nist-sdp-1.0.jar
<http://jain-sip.dev.java.net/>
Public Domain
Used in SIP Calls

ojdbc14.jar
Version 10.2.0.1.0, Current Version 10.2.0.1.0
<http://www.oracle.com>
Bought
Used in the Oracle database connection

quartz.jar
Version 1.6.0, Current Version 1.6.0
<http://www.opensymphony.com/quartz/>
Apache License Version 2.0, January 2004
Scheduling engine used for addTimer and data acquisition

richfaces-api-3.3.1.GA.jar
Version 3.3.1.GA, Current Version 3.3.2 SR1
<http://www.jboss.org/richfaces>
LGPL
Webapp programming framework

richfaces-impl-3.3.1.GA.jar
Version 3.3.1.GA, Current Version 3.3.2 SR1
<http://www.jboss.org/richfaces>
LGPL
Webapp programming framework

richfaces-ui-3.3.1.GA.jar
Version 3.3.1.GA, Current Version 3.3.2 SR1
<http://www.jboss.org/richfaces>
LGPL
Webapp programming framework

serializer.jar
Version 2.7.0
<http://xml.apache.org/xalan-j/>
Apache License Version 2.0, January 2004
Helper to (de-)serialize data, which is needed by Velocity

slf4j-api-1.5.3.jar
Version 1.5.3, Current Version 1.5.10
<http://www.slf4j.org/>
Freeware
Used for logging in JPA

slf4j-log4j12-1.5.3.jar
Version 1.5.3, Current Version 1.5.10
<http://www.slf4j.org/>
Freeware
Used for logging in JPA

struts.jar
Version 1.2.4, Current Version 2.0.8
<http://struts.apache.org/>
Apache License Version 2.0, January 2004
Framework that supports web development

Stun4J.jar
-no versioning-
<https://stun4j.dev.java.net/>
LGPL (Version 2.1, February 1999)
SIP call tool

velocity-1.4.jar
Version 1.4, Current Version 1.5
<http://velocity.apache.org/>
Apache License Version 2.0, January 2004
Framework that supports web development

velocity-tools-1.1.jar
Version 1.1, Current Version 1.3
<http://velocity.apache.org/>
Apache License Version 2.0, January 2004
Framework that supports web development

WinRegistry-4.5.jar
Version 4.5
<https://code.google.com/p/java-registry/>
LGPL v3
Used for installer

xalan.jar
Version 2.7.0, Current Version 2.7.1
<http://xml.apache.org/xalan-j/>
Apache License Version 2.0, January 2004
Used in the database framework

xmlsec-1.4.3.jar
Version 1.4.5, Current Version 1.4.5
<http://santuario.apache.org/>
Apache License Version 2.0, January 2004
Used in the database framework

Index

A

acknowledged events, 75
 action types, 34
 active alarm/event, 75
 Adcon system, 7–9
 adding
 actions, 34
 areas in Explorer, 23
 data source, 51
 extensions and crops to areas, 81
 irrigation from events viewer, 77
 manual events from events viewer, 77
 multiple extensions and crops, 81
 objects to a List, 60
 RTU diagnostics to a tag, 81
 RTU diagnostics when adding RTU, 41
 tags to trends, 65
 treatments from events viewer, 77
 users, 28
 addMIN file, 16
 addMIN utility
 database tab, 48–??
 extensions tab, 17
 server tab, 17
 using, 17
 where to run, 17
 addUPI
 role, 32
 utility, 50
 addVANTAGE client, starting, 21
 addVANTAGE file, 16
 admin logs, server, 46
 admin role, 32
 administering users and groups, 27
 administrator requirements, Internet services, 10
 advanced configuration for server, 91
 advanced settings
 properties, 86
 search, 26
 showing for extensions, 42
 SIP/VoIP, 48
 advanced_user role, 32
 alarms
 acknowledging, 76
 displaying in Explorer, 76
 events, 75
 locating source, 77
 showing, 75
 American measurements, 43
 area
 adding extensions and crops, 81
 definition, 22

 new in Explorer, 23
 area_admin role, 32
 ASCII export
 all data, 72
 selected data, 73
 assigning groups, 28
 automatic
 database backup settings, 48
 install crop extensions, 42
 properties values recalculation, 80
 save panels, 40
 startup service, 20
 autoscale, 66
 autostack, 67
 average_user role, 32

B

backing up the database, 48
 backup information, server, 45
 band, trend, 67
 base station, definition, 8
 batch files, 16
 button, definition, 12

C

calculation extensions
 definition, 80
 properties, 85
 changing
 dates for phenological phases, 83
 default installation settings, 16
 engineering units, 43
 panel properties, 79
 password, 44
 security settings, 43
 sensor values, 24
 trend options, 66
 user options, 40
 user's start node, 28
 WAP access password protection, 11
 checkbox, definition, 12
 choosing tags for a Trend Viewer, 66
 client, starting, 21
 Climate Manager, 58
 climate setting in RTU, 37
 colors of alarms, 76
 common properties of extensions and crops, 82
 compatibility of software, 10
 condition, setting, 38
 configuring
 cell phone for WAP, 10
 data acquisition service, 50

- data source security, 52
- extensions and crops, 82
- gateway, 9
- log display, 44
- update configuration, 37
- context sensitivity, 11
- conventions document, 12
- convert.bat, 17, 89
- converting
 - 5.1 to 6.1 database, 17, 89
 - database earlier than 5.1, 91
- copying a database, 49
- copying users, 28
- creating
 - event panel from template, 78
 - events in the viewer, 77
 - Events Viewer, 73
 - List, 60
 - nodes, 23
 - RTU with wizard, 54
 - trend from events viewer, 77
 - trend panel from template, 71
 - Trend Viewer, 62
- crops
 - adding multiple, 81
 - adding to areas, 81
 - automatically installing disease models, 42
 - configuring, 82
 - default start date, 41
 - definition, 22, 80
 - hiding, 42
 - properties, 82
 - starting new season, 81
 - tools menu, 41
 - using templates, 81

D

- data acquisition
 - configuring, 50
 - overview, 50
 - polling interval, 51
 - RAS settings, 91
- data acquisition, setting schedule, 52
- data source, dial-up, 91
- data storage time in gateway, 8
- database
 - changing backup settings, 48
 - converting 5.1 to 6.1, 17, 89
 - converting earlier than 5.1, 91
 - copying, 49
 - managing, 48
- database, server information, 45
- default group for users, 29
- default options, all panels, 40
- defaults
 - crop start date, 41
 - event options, 41
 - trend options, 41
- definitions
 - active (alarm or event), 75
 - addMIN file, 16
 - addupi role, 32
 - addUPI utility, 50

- addVANTAGE file, 16
- admin role, 32
- advanced_user role, 32
- area, 22
- area_admin role, 32
- automatic service, 20
- average_user role, 32
- base station, 8
- button, 12
- calculation extensions, 80
- checkbox, 12
- context sensitivity, 11
- convert.bat utility, 17, 89
- crops, 22, 80
- data acquisition service, 50
- demo_user role, 32
- diagnostic extensions, 80
- disabled service, 20
- disease models, 22, 80
- dropdown, 12
- Events viewer, 73
- Explorer, 21
- extension, 9
- extension_user role, 32
- extensions, 9, 80
- group, 27
- List, 60
- listbox, 12
- login report, 49
- manual service, 20
- panel, 22
- parameter, 7
- poll interval, 51
- radio button, 12
- remote station, 8
- role, 27, 31
- root node, 22
- RTU, 8
- RTU diagnostics, 80
- sensor, 7
- server, 8
- service install utility, 16
- service remove utility, 16
- services, 9
- SIP, 47
- StartServer.sh file, 16
- tag, 12
- tag, 13
- text field, 12
- total poll duration, 51
- Trend viewer, 62
- user ID, 27
- user monitor, 49
- virtual sensor, 13
- VoIP, 47
- wap_user role, 32
- deleting
 - directories, 16
 - objects from a List, 60
- diagnostics
 - RTU, 53, 80
 - server, 44
- disabling
 - data transfer from a server, 54

- password protection for WAP, [11](#)
- startup service, [20](#)
- disconnecting from the server, [21](#)
- disease models
 - definition, [22](#), [80](#)
 - properties, [85](#)
- displaying
 - data in a Trend Viewer, [62](#)
 - engineering units, [43](#)
 - node IDs, [41](#)
- document conventions, [12](#)
- dropdown, definition, [12](#)
- duration, session timeout, [44](#)

E

- editing
 - account privileges, [44](#)
 - Climate Manager extensions, [59](#)
 - licensing information, [17](#)
 - memory settings, [91](#)
 - password, [44](#)
 - personal information, [40](#)
 - read/write permissions, [44](#)
 - SIP/VoIP settings, [47](#)
 - user profile, [40](#)
 - users, [28](#)
- e-mail address, [40](#)
- e-mail service, [46](#)
- e-mailing a log, [44](#)
- engineering units, [43](#)
- Events Viewer
 - choosing nodes, [74](#)
 - creating event panel from template, [78](#)
 - creating events, [77](#)
 - creating trends, [77](#)
 - default options, [41](#)
 - definition, [73](#)
 - event types, [74](#)
 - exporting data, [77](#)
 - hiding event types, [77](#)
 - linking panels, [78](#)
 - opening, [73](#)
 - options, [73](#)
 - removing areas, [74](#)
 - sample, [76](#)
 - saving, [77](#)
 - showing alarms, [75](#)
 - showing event types, [77](#)
- examples of addVANTAGE Pro installations, [14](#)
- executable files installed by software, [16](#)
- Explorer
 - crops, [22](#)
 - definition, [21](#)
 - disease models, [22](#)
 - displaying alarms, [76](#)
 - extensions, [22](#)
 - functions, [23](#)
 - panels, [22](#)
 - RTU, [22](#)
 - tags, [22](#)
 - tools menu, [41](#)
- exporting
 - ASCII data from trend, [72](#)

- event data, [77](#)
- selected trend data, [73](#)
- extension_user role, [32](#)
- extensions
 - adding multiple, [81](#)
 - adding to areas, [81](#)
 - automatic recalculation, [80](#)
 - Climate Manager, [58](#)
 - common properties, [82](#)
 - configuring, [82](#)
 - crop stages, [83](#)
 - definition, [9](#), [80](#)
 - hiding, [42](#)
 - in Explorer, [22](#)
 - input tags, [87](#)
 - installing general purpose, [18](#)
 - showing alarms in Explorer, [76](#)
 - tab on properties dialog, [86](#)
 - tools menu, [42](#)
 - using templates, [81](#)

F

- forcing
 - data retrieval, [56](#)
 - properties recalculation, [81](#)
- full name, [40](#)

G

- gateway
 - configuring, [9](#)
 - data storage, [8](#)
- graphical view of a trend, [63](#)
- groups, [27](#), [28](#)

H

- hiding event types in events viewer, [77](#)

I

- immediate database backup, [49](#)
- imperial measurements, [43](#)
- importing
 - backup database, [49](#)
 - data from addVANTAGE Pro to other programs, [11](#)
 - tag values, [24](#)
- inputs properties, [87](#)
- installing
 - batch files, [16](#)
 - examples, [14](#)
 - general purpose extensions, [18](#)
 - server as a service, [20](#)
 - server as service, [16](#)
 - server software, [15](#)
 - short path, [14](#)
 - utilities during startup, [16](#)
- instrument view of trend, [73](#)
- Internet services
 - administrator requirements, [10](#)
 - overview, [10](#)
 - prerequisites, [10](#)
 - WAP access, [10](#)
- irrigation properties, [85](#)
- irrigation, adding to events viewer, [77](#)

L

language, selecting, [40](#)
 library, template, [56](#)
 licensing information, editing, [17](#)
 linking panels, [78](#)
 List
 adding items through search, [61](#)
 adding objects, [60](#)
 definition, [60](#)
 deleting objects, [60](#)
 opening, [60](#)
 quick search, [61](#)
 listbox, definition, [12](#)
 locating the source of alarms, [77](#)
 log monitor, [44](#)
 login report, [49](#)
 logs, server, [46](#)

M

managing databases, [48](#)
 manual event, adding to viewer, [77](#)
 manual startup service, [20](#)
 map view, [25](#)
 memory settings, editing, [91](#)
 messages to users, [49](#)
 metric measurements, [43](#)
 minimum system requirements, [9](#)
 modularity of Adcon system, [8](#)

N

new features, [7](#)
 node IDs, displaying, [41](#)
 node template library, [56](#)
 nodes
 creating, [23](#)
 renaming, [23](#)
 selecting to display events, [74](#)
 notifying users, [49](#)
 number of RTUs that use a data source, [51](#)

O

opening
 Events Viewer, [73](#)
 List, [60](#)
 Trend Viewer, [62](#)
 opening logs, [44](#)
 options in an Events Viewer, [73](#)
 overlap, [67](#)

P

panel, definition, [22](#)
 panels
 changing properties, [79](#)
 default options, [40](#)
 reopening last panels, [41](#)
 tools menu, [40](#)
 parameters, definition, [7](#)
 password protection for WAP, [11](#)
 password, needed for WAP access, [44](#)
 phenological phases, [83](#)
 phone number, [40](#)
 plant protection properties, [82](#)

platforms for software, [9](#)
 plot properties, [67](#)
 poll interval, [51](#)
 prerequisites for offering Internet services, [10](#)
 properties
 actions, [34](#)
 advanced settings, [86](#)
 calculation extensions, [85](#)
 climate extensions, [58](#)
 crop, [82](#)
 diagnostic extensions, [87](#)
 disease models, [85](#)
 extensions, [86](#)
 inputs, [87](#)
 irrigation, [85](#)
 permissions, [35](#)
 treatments, [83](#)
 properties of RTUs and tags, [37](#)
 public trend, [36](#), [92](#)

Q

quick search for List items, [61](#)

R

radio button, definition, [12](#)
 RAS settings, [91](#)
 reconnecting tags, [54](#)
 remote station, definition, [8](#)
 remote telemetry unit. *See* RTU.
 removing
 areas from event viewer, [74](#)
 server as a service, [16](#)
 users, [28](#)
 renaming nodes, [23](#)
 reopening panels when logging in, [41](#)
 retrieving data from the server, [53](#)
 roles
 concepts, [27](#)
 definitions, [32](#)
 overview, [31](#)
 root node, definition, [22](#)
 RTU
 climate setting, [37](#)
 creation wizard, [54](#)
 definition, [8](#)
 diagnostics, [53](#)
 in areas, [22](#)
 in Explorer, [22](#)
 properties, [37](#)
 RTU diagnostics, [41](#), [58](#), [80](#), [81](#), [87](#)
 running the addMIN utility, [17](#)

S

saving
 Events Viewer as a panel, [77](#)
 templates, [57](#)
 Trend Viewer as a panel, [70](#)
 saving a log file, [44](#)
 searching for items to add to a List, [61](#)
 security
 node, [35](#)
 user options, [43](#)
 security settings for data sources, [52](#)

- selecting
 - ASCII data sets to export, 73
 - language, 40
 - nodes to display events for, 74
 - options for a Trend Viewer, 66
 - selecting a log to view, 44
 - sending a log, 44
 - sending messages to users, 49
 - sensors, definition, 7
 - server
 - advanced configuration, 91
 - definition, 8
 - disabling data transfer, 54
 - disconnecting from, 21
 - information, 44
 - installation, 15
 - installing as a service, 20
 - not using as service, 20
 - retrieving data, 53
 - shutting down, 21
 - starting, 19
 - server diagnostics, 44
 - Server Monitor, 19
 - service logs, events, 75
 - service.bat, 16
 - services
 - chemicals, 56
 - data acquisition, 50
 - definition, 9
 - e-mail, 46
 - install utility, 16
 - installing server as, 20
 - remove utility, 16
 - session timeout, 44
 - setting
 - data acquisition schedule, 52
 - log levels, 44
 - setting up public trends, 93
 - settings
 - changing database backup, 48
 - conditions that trigger events, 38
 - default start date for crops, 41
 - events and actions, 34
 - input tags for extensions, 87
 - node permissions, 35
 - plots, 67
 - SIP/VoIP, 47
 - tag thresholds, 38
 - tools menu, 40, 43
 - trend thresholds, 67
 - short path to addVANTAGE Pro installation, 14
 - showing
 - advanced settings for extensions, 42
 - alarms in Events Viewer, 75
 - crops, 42
 - extensions, 42
 - node IDs, 41
 - showing hidden event types in events viewer, 77
 - shutting down the server, 21
 - SIP/VoIP settings, 47
 - software
 - compatibility, 10
 - executable files installed, 16
 - installing server, 15
 - platforms, 9
 - special groups, 32
 - starting
 - client, 21
 - new season of crop, 81
 - server, 19
 - StartServer.sh file, 16
 - stations assigned to a data source, 51
 - statistics, server, 46
 - switching from graphical to trend view, 71
 - system requirements, 9–10
- ## T
- tab, definition, 12
 - tabular view of trend data, 63
 - tags
 - adding to Explorer for retrieving data, 53
 - adding to trends, 65
 - definition, 13
 - in Explorer, 22
 - properties, 37
 - reconnecting, 54
 - setting in extensions, 87
 - setting thresholds, 38
 - template library, 56
 - templates
 - creating events viewer, 78
 - creating trend, 71
 - extension, crop, 81
 - testing data sources, 51
 - text field, definition, 12
 - thresholds
 - tag, 38
 - trend, 67
 - tools menu
 - assigning default privileges, 30
 - assigning groups, 28
 - chemicals, 56
 - crops, 41
 - data acquisition, 50
 - e-mail service, 46
 - engineering units, 43
 - explorer, 41
 - extensions, 42
 - getting data, 56
 - panels, 40
 - security, 43
 - server information, 44
 - settings, 40
 - users and groups, 27
 - using, 39
 - total poll duration, 51
 - treatments
 - adding to events viewer, 77
 - properties, 83
 - recommending, 84
 - Trend Viewer
 - adding tags to trends, 65
 - creating trend panel from template, 71
 - definition, 62
 - displaying data, 62
 - drag and drop, 63
 - Explorer, 64

- exporting data, 72
- instrument view, 73
- linking panels, 78
- opening, 62
- saving a view, 70
- selecting options, 66
- setting thresholds, 67

- trends
 - creating from events viewer, 77
 - default options, 41
 - making public, 36
 - setting up public, 93
- types of events for Events Viewer, 74

U

- uninstalling
 - addVANTAGE Pro 5.0, 16
 - previous addVANTAGE versions, 15
 - server as service, 16, 20
- updating the system configuration, 37
- usage, server, 45
- user
 - changing start node, 28
 - ID, definition, 27
 - monitor, 49
 - options, changing, 40
- users
 - sending messages to, 49
- users, default group, 29
- using
 - addMIN utility, 17
 - Climate Manager, 58
 - data in other programs, 11
 - imperial measurements, 43
 - metric measurements, 43
 - template for event panels, 78
 - template for trend panels, 71
 - tools menu, 39
- utilities installed during startup, 16

V

- viewing
 - data, 25
 - data sources, 37, 50
 - events, 73
 - logs, 44
 - RTU on map, 25
 - server admin logs, 46
 - server backup information, 45
 - server database information, 45
 - server statistics, 46
 - server usage, 45
 - switching from graphical to trend view, 71
 - trend data in a graph, 63
 - trend data in a table, 63
 - trends, 64
 - virtual instruments of a trend, 63
- virtual instruments
 - trend, 63
 - view, 73
- virtual sensor, definition, 13
- visibility of crops, 42

- VoIP settings
 - See SIP/VoIP, 47

W

- WAP
 - disabling password protection, 11
 - enabling access, 10
 - password needed, 44
- wap_user role, 32
- what's new, 7
- wizard, create RTU, 54
- working with users and groups, 27